PHILADELPHIA, FEBRUARY 25, 1882.

## ORIGINAL LECTURES.

### CLINICAL LECTURE

### ON SOME POINTS CONNECTED WITH THE DIET OF INFANTS.

*Delivered at the Philadelphia Hospital, February 1, 1882,*

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GENTLEMEN,—I will take advantage of the opportunity afforded me this morning by the presence of the cases selected from many in the lying-in wards and nursery, now before you, to illustrate by them the great importance of attention to the diet of young infants. You can see for yourselves the effects of the maternal milk upon the babe, noticing that those mothers who appear feeble and look cachectic carry children who bear evidence of the want of nutriment in the milk; and, again, those that are robust prove their state of health by the children they carry in their arms. Then, again, you will note the miserable appearance of these fatherless and motherless babes who have been found abandoned upon door-steps or cellar-ways, and whom we are obliged to feed the best we can upon bottle-food, with a very poor prospect of success. This question of infant-feeding will come before you some day in a problem most difficult to solve, and it will try not only your patience, but your ingenuity, to surmount its many difficulties.

It is well for me at the outset to state definitely to you the views I have adopted after a careful study of this subject, for I feel assured that your own experience will coincide with mine. I believe that all mothers should nurse their babes for at least six months, unless the family physician should deem the contrary advisable; but he should always be consulted, and should weigh the balance well before giving an opinion. In case the mother then cannot nurse her child, the next best thing is, most decidedly, a suitable wet-nurse; and especially do I urge this upon you if the child be in delicate health, or should the matter come before you for decision during the summer and the babe be obliged to remain in town. Should it be difficult for you at the time to obtain a wet-nurse, or should the circumstances of the family make the additional expense of keeping one a matter of great importance, and the babe at the same time be in good health and vigorous, with an intelligent mother to assist you, or an able and experienced child's-nurse to carefully carry out your instructions and to suggest changes in diet as the case requires, you will not find bottle-feeding to be the *bête noire* that it is so generally considered. Statistics in hospitals, which show the frightful mortality amongst hand-fed babes, are not reliable for this purpose. I may tell you that the mortality of the "foundlings" in this institution is nearly sixty per cent. of those admitted. Those babies that are healthy when found, and attractive, are adopted into childless families, and of the remainder but very few survive. Of this remainder, whose great mortality is a subject of so much comment, probably two-thirds, or even more, are found to show symptoms of congenital syphilis before they die; all have been exposed on door-steps, cellar-ways, etc., for hours, in all seasons, before they have been found; this infant which I bring to show you, and which still lingers with us, has a specific eruption upon it, and a history of having vomited curds saturated with paregoric shortly after its admission to the house.

I believe that the mortality could be somewhat lessened if such children were wet-nursed; but, gentlemen, with the present state of the history of disease, I should never allow a babe with the slightest suspicion of syphilis—and all such infants have—to touch the breasts of any woman healthy enough to give the nourishing milk. You will see, then, that though a more careful system of nursing, with all the modern improvements in regard to babies' foods and proper ventilation, might save a very small percentage more of the foundlings than the records of this institution show, the large mortality may be based upon exposure and inherited disease, rather than upon bottle-feeding. Then, again, you must bear in mind that the farther you deviate from the plan already adopted by nature in the nursing of infants, the greater must be the care in order to insure success; and therefore the general term "bottle-feeding" receives popular condemnation

because the word "careless," which should precede it, is left to be understood.

I may then tell you that the bottle-feeding of babes, though occupying the third consideration in the treatment of our subject, becomes on that account the most important one for us to study, because the success or failure that will attend it shall depend upon the scientific precision with which the rules are set down by you, and the careful, conscientious manner in which they are carried out by the attendant or mother. Your directions cannot be too explicit, and your inquiries cannot be too exact. The question of the freshness and strength of the cow's milk will have to be taken into consideration; the importance of diluting and sweetening it to bring it to average analysis of mother's milk; regularity in feeding, and the proper working of the child's digestive organs to insure its digestion. I have elsewhere alluded to this subject,* and to-day I will merely detain you by a few remarks upon the foods which have appeared in the market, and about which you will surely be questioned by anxious mothers.

Borden's condensed milk and the Anglo-Swiss food are frequently used in the place of milk when the latter is difficult to obtain, or when there is difficulty in suiting to a child's stomach the milk from various cows. Let me illustrate this. A family are boarding in the country in summer towards the end of the hot season, and a bottle-fed babe has been doing well. Suddenly the child becomes ill; the milk is not retained, the bowels become loose, and the case becomes a serious one. No cause can be found apparent at the time. The milk will not agree, and the child requires an immediate change. If you are getting *one* cow's milk, you may change to another: this also fails to agree. Then it is necessary to put the child on condensed milk, for a while at least, and under these circumstances its use is not only indicated but imperative. You will no doubt discover that the cow had been changed to a clover-pasture, and that the cause of the disturbance was this. I mention this to guard those of you who are unfamiliar with farm-ways:—milk, fresh milk, and *one cow's* milk, may not be the bland, nutritious, unirritating diet that it looks; the cow's pasture, having recently calved, bad drainage of the dairy, often insinuate an unseen but potent poison to the babe. You will find, certainly in this part of the world, no better substitute for mother's milk than that of the cow, not given in its full strength, but prepared and diluted to suit each individual case. I caution you about the use of condensed milk as used exclusively for diet for any prolonged length of time. As a substitute for cow's milk during a period of illness, or, again, as a resort during hot weather, when the keeping of milk seems an impossibility, or for use during a short residence at the seashore, where good milk is hard to obtain, it is invaluable; but I would advise you not to recommend mothers to bring up their infants upon condensed milk alone. It may agree well for a time, and the child may fatten and thrive; but its fat and muscle will not be of the permanent kind: it will not have the power of resistance to disorders which a diet of mother's or cow's milk would give it.

It is scarcely necessary for me to spend any time to-day in explaining to you the uselessness of giving much starchy food to young infants. You all know that starch must be converted into grape-sugar during its digestion, and that this is usually done by the saliva first, and finally by the pancreatic juice. In a young infant these secretions are reduced to the minimum, and it is not until dentition is pretty well started that they are sufficiently established to aid in the digestive functions. You should therefore carefully guard your advice in recommending the form of nourishment for an infant: satisfy yourself beforehand either that the child is of an age to digest or turn into *glucose* any starchy substance added to its milk, or that no starch is given and depended upon alone for the child's nourishment. Whilst on this subject, I may state to you that frequently you will find it advisable to take advantage of this very fact, in order to prevent the curd of cow's milk forming in one tenacious mass, by adding to the child's food a small quantity of arrow-root or some wheat *food*, which, when thoroughly incorporated with the milk, will make the curds flaky, and be harmless in itself.

The *gluten* is the portion of the cereal which you should seek in the preparation of an infant's food. It is the most easily digested, and also one of the most nourishing substances. It is it which is essential to bread-making, forming as it does the outer border of the air-holes found in well-

* Mother's Guide, etc.

risen bread. You can obtain it by sprinkling ordinary flour on a goblet of water; the gluten will hydrate and settle to the bottom; and by pouring off the starch and water you will get a tenacious, pasty mass, which is pure gluten. Let me describe to you the place it occupies in the grain:

"If a grain of wheat as a type of other cereals be examined, there will be found first the outer coat, middle and inner coats, forming together the husk or bran. These coats are wholly destitute of nutritious properties. Next in order comes a layer of cells or sacs, crowded together and lying in irregular shapes. These sacs average $\frac{1}{675}$ of an inch in diameter, contain gluten, with a little oil and albumen. The gluten is in the form of small granules $\frac{1}{1500}$ of an inch in diameter; and when a sac is ruptured, these adhere to each other (are glued together) with great tenacity. Lastly, in the centre of the grain, packed away in cells or sacs, is the starch, also in small granules."*

The substitute, then, for mother's milk should consist of a fluid resembling it as closely as possible, and containing in quantities more or less any other materials which are nutritious and easy of digestion. For this latter purpose has gluten been selected, containing as it does the concentration of nutriment, and not requiring any chemical change to transform it into a soluble substance. Starch, when converted into *dextrine*, and then into *glucose*, becomes also a food, and for this purpose the various foods for babies are malted, in order that a partial digestion or transformation shall take place outside of the stomach and independent of the action of the salivary glands and of the pancreas. But then, gentlemen, you are well aware that the *non-nitrogenous* class of foods—the starchy, saccharine, and fatty—are essential only to the production of animal temperature. You have doubtless heard experiment after experiment cited by your professor of physiology, in which animals have starved to death when fed liberally upon this class alone.† It is otherwise with the *nitrogenous* forms, represented in the cereal by the *gluten* in the bran. An animal can live and repair its tissue-waste upon nitrogenous diet exclusively, and can keep up a certain amount of animal heat. It is not a question, then, whether or not young babes can digest starchy food: to a limited amount, in many cases, probably they can: we do know that, even should they be able to convert starch into saccharine matter and absorb it, it is absolutely worthless as regards the reparation of tissue, and that consequently the children who are forced to live on bottle-food of thin corn-starch made with water, or farina, or maizena, or cerealina, or white-wheat flour, get their growth only by the small amount of *gluten* which (by mistake!) was allowed to remain in the food.

It makes no difference, then, if you can or cannot detect the reaction of starch, or polarize light by its granules, in the stools of infants fed upon it. Physiologically, as a *food*, in the sense of repairing tissue, it is inert.

From this hasty *résumé* of our subject, in which I have endeavored to present to you in as clear a manner as possible the matter of infants' diet, you will see that a great responsibility rests upon the physician in the choice of the substitutes for mother's milk. It is well to occasionally change from one preparation to another, and not attempt to bring a child up on one exclusive preparation. You should be sure that the food recommended by you contains either milk or milk with food prepared from cereals, or that it should have a large proportion of gluten, and that the small amount of starch should be prepared for digestion either by baking or malting, so as to facilitate its easy change to grape-sugar.

With this object in view, I will read for you a few extracts from a most excellent article by Dr. Ephraim Cutter, of Boston, which has lately appeared, and which gives the results of a microscopic examination of a number of "foods" and flours (800 diameters), from which, with what I have told you, you can draw your own conclusions. You should verify these statements by careful microscopic investigations of your own.

"1. *Common wheat flour.*—In making flour, three-fourths of the gluten is removed, and the chief strength of the food is thus destroyed.

"2. *Imperial granum food.*—It ranks only with common flour.

"3. *Ridge's food.*—The proprietors must add gluten cells, at least in the proportions found in wheat or maize, to bring their product up to the standard of wheat flour.

"4. *Horlick's food.*—It approaches common flour.

* American Medical Weekly, January 7, 1882,—article by Ephraim Cutter, A.M., M.D.

† See Flint's Physiology,—Digestion.

"5. *Mellin's food.*—This food stands high in the list. Should the proprietors put in the full proportion of gluten cells, it would be faultless.

"6. *Gluten flour, New York Health Food Co.*—Cannot be distinguished from common flour.

"7. *Gluten flour, several specimens.*—Where only seventy gluten cells are found in a flour claimed to be all gluten, comment is unnecessary.

"8. *Franklin Mills entire wheat flour.*—Repeated examinations prove this to be the best flour examined. So long as the makers maintain such a proportion of gluten cells, they confer a blessing on mankind. It produces a light and spongy bread. It is a reliable infant's food.

"9. *Blanchard's glutena.*—While there is gluten always found, this food contains ninety per cent. of starch and only ten per cent. of gluten,—the reverse exactly of the claim made for the food.

"10. *Blair's wheat food.*—Abundance of free starch grains, giant, medium, and granular. No gluten cells.

"11. *Nestle's milk food.*—It contains starch, and in the field there is an abundance of oil-globules. There is milk in it, but no gluten, and a quantity of starch.

"12. *Anglo-Swiss food.*—It is a milk food, with some gluten and cooked starch.

"13. *Baby sop*, 1.—Contains all the elements of the oat; an abundance of gluten. Starch grains much smaller than those of the wheat, and the gluten cells of characteristic shape. This food is made of unhulled oats, malted and crushed. Sustains its modest claims.

"14. *Victor's baby food.*—Claims 'a close resemblance to mother's milk.' It is like cracker and biscuit ground up.

"15. *Hubbell's prepared wheat.*—Starch cooked, but not enough to prevent polarization of light. A few gluten cells. Not up to its claims.

"16. *Mother's cereal milk substitute.*—It contains gluten cells, bundles of wheat-starch, barley-starch, and gluten granules.

"17. *Hawley's Liebig's food.*—Wheat-gluten cells, barley-gluten cells, barley tegument, wheat-starch corded granular masses, not polarizing light; well malted. A good food, and its claims are sustained.

"18. *Gerber's food.*—Gerber's food for infants and children seems to be crackers ground.

"19. *Keasbey & Mattison's Infant's food.*—Contains no gluten cells. It consists of grape-sugar and dextrine (converted starch), and is claimed to contain alkaline phosphates.

"20. *Savory & Moore's food.*—Appears the same as common flour."

I would, then, recommend to you to use cow's milk as a basis for the bottle-feeding of infants,—condensed milk at times when cow's milk proves injurious or when it is difficult to obtain, adding to it a preparation made from the cereals in order to supply an increased amount of nourishment. You should make the latter from the *crushed* grains, in order to get the phosphates which are contained in the bran and the gluten. You may use cracked wheat, coarse oatmeal, or crushed barley, using first cold water, and finally bringing it up to a high temperature and evaporating to half the quantity, so that the gelatinous material, when strained and cold, will represent the nutritive elements of the grain in a most concentrated form.

In very young infants I would advise you to adhere to a strict milk diet, and to avoid any additional preparations, which would only burden the digestive organs of the child. As the infant grows older, you can with caution advise the trial of Mellin's food, Hawley's food, Nestle's milk food, or the Anglo-Swiss food, any of which added to the cow's milk will make it more nutritious; but at the same time let me caution you to use them in moderation and vary the preparations. Gluten itself, as physiologists will tell you, acts as a ferment in the change of starch into dextrine and grape-sugar, and, consequently, when a preparation is found rich in gluten its starch will be more rapidly changed and assimilated. I do not, then, tell you not to give starchy food to infants, but I urge you most emphatically to impress upon those under your charge, not to expect an infant to live and thrive on starchy food alone: however soluble you may get it by its conversion into sugar either outside or by the digestive juices of the child, it will be useless as a food for the purpose of sustaining life, and will only act as a heat-producer.

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HYPODERMIC INJECTION OF COLD WATER.—Dr. Raymond Tripier employs subcutaneous injections of aqua fontis to prevent vomiting of food in phthisical patients. For this purpose, he writes in the *Lyon Médical*, he injects into the epigastrium a syringeful of very cold water, either before or immediately after the meal. Under the influence of these injections he has often witnessed the cessation of vomiting which had persisted in spite of appropriate remedies. It appears similarly to stop vomiting in some dyspeptics, and especially in so-called nervous women who dread the use of morphia. It is in these latter patients especially that it is convenient not to let them know the nature of the fluid injected.

## ORIGINAL COMMUNICATIONS.

### THE TREATMENT OF SYPHILIS IN ITS DIFFERENT STAGES.

*Read before the Philadelphia County Medical Society, December* 14, 1881,

BY E. L. KEYES, M.D.,

New York.

GENTLEMEN, — In responding to-night to your call for a short paper on the "treatment of syphilis in its different stages," I find that I have accepted a task more honorable than easy of performance.

It would be idle for me to rehearse to you the different treatments at present approved by the varied authorities whose position in the profession entitles their opinions to respect. Such information is open to any one who searches for it in the abundant literature of the day, and the mere parade of it has no value. Authorities differ, and a statement of their methods gives no clue to the relative value of their claims.

Nor would it be agreeable for me or acceptable to you to detail to you simply my own notions on the subject under consideration. They are already before the profession, and their recapitulation alone will not add either to their force or to any value they may possess.

I shall, therefore, in the hope of exciting profitable discussion, employ the greater part of my time to-night in a consideration of the nature of syphilis and the needs of its different stages and symptoms for treatment, and in trying to justify the methods I have adopted and promulgated by giving the reasons upon which the course is founded. The course itself is, perhaps unfortunately, known by a name which causes it to be misunderstood, and the reasons upon which the course is founded have, I believe, been lost sight of, being overshadowed by one of the accidents of the course,—namely, its tonic quality.

I shall approach my conclusions by a consideration of the subject briefly under five heads, as follows:

1. Syphilis in all cases requires treatment by specifics.

2. Syphilis is one and the same for all, modified by constitution, diathesis, and surroundings, varying in its symptoms according to the soil in which it grows: therefore, as the disease is one, so should the treatment be, modifications in treatment being directed against individual peculiarities: the individual must be treated as well as the disease.

3. Mild continued treatment by mercury meets all the general indications of the disease as a whole, and has the extra advantage of being itself tonic.

4. The abortive treatment: there is none yet known the claims of which have been satisfactorily demonstrated.

5. The question of mercury *versus* iodine; of patients who can take neither. The value of the preparations of iodine, and the objection to their use early in syphilis.

1. Syphilis in all cases requires treatment by specifics.

Syphilis is a picturesque disorder, full of surprises. Its symptoms are grouped with a very irregular regularity. They come within sufficiently definite bounds to allow a reasonable classification into stages; but the stages are constantly more or less overlapping each other, and at what time the very last symptom has appeared or is to appear, no honest person can certainly decide or predict.

There is, however, a very distinct tendency to self-limitation on the part of the disease, and to spontaneous cure after the lapse of a certain indefinite period, and this cure may occur without specific treatment, and does occur in severe as well as in mild cases. Syphilis does run itself out in time, and patients become capable of reproducing healthy offspring and incapable of transmitting the disease, thus proving themselves to be well in so far as the persistence of any specific transmissible poison is concerned.

On the other hand, by the uniform testimony of all observers, if there is any specific treatment, any counteracting influence which obviously controls the active manifestations of the poison, that specific and that influence are found best expressed in the various preparations of mercury and of iodine.

Yet these preparations, strictly speaking, do not cure the disease. They put off the date of appearance of symptoms, control symptoms in a measure when they do appear, and more or less surely prevent relapse, but they probably do not materially shorten the total duration of the disease.

What need, then, is there for any specific

at all, and why should not the disease, especially mild cases of it, be allowed to run its course under the sustaining influence of tonics, hygiene, etc.?

Indeed, this course is advocated by men of high prominence and large experience. Diday long ago taught that mild syphilis should be left alone so far as mercury was concerned, and Zeissl and Sigmund more recently have written very ably in defence of a similar course. All of these gentlemen agree, however, that when the symptoms run high and when important organs or tissues are threatened, then the powerful aid of mercury must be invoked to arrest the devastation. The idea still holds nearly unbroken sway in the profession (as it does entirely in the minds of the public) that mercury is an evil thing, and only to be tolerated and employed because syphilis is worse.

The argument is, if mild syphilis will get well without mercury, let it do so. Use mercury for serious lesions to prevent scarring, loss of tissue or of function, but stop using it as soon as possible after the symptoms are under control.

Short courses of mercury and rapidity of the cure of symptoms seem to be the aim and object of many systems of treatment. The *coup sur coup* treatment aimed at destroying the disease by crowding it down with heavy treatment, when it showed itself, without regard to any harm that might be done the patient by excess of mercury. Treatment by the ancient method of salivation had the same general end in view. The modern milder French treatment,—interrupted courses of mercury,—generally called Fournier's treatment, is a modification of the same idea, although the quantity of mercury is brought within limits where it does no harm. The advocates of mercurial vapor-baths, and of inunction treatments, and of courses of hypodermic injections of mercuric peptones, and the like, make the claim for adoption of their systems that the symptoms disappear very promptly under the use of less mercury and for a shorter length of time than is required by other systems, or by the use of mercury introduced in a manner calculated to do little or no harm to the general system. The claims of the Arkansas Hot Springs rest largely on the eliminative qualities of the waters, which allow larger quantities of medicines to be used to combat symptoms than could be safely employed at home, in this way curing inveterate lesions in a shorter time than could be done otherwise. I think the claim that relapses are prevented by a course at the Hot Springs is pretty well given up by intelligent and unprejudiced observers.

Now, if the premises just detailed are correctly stated, it follows that mercury, given in one way or another, is generally recognized at the present day as the natural enemy of syphilis, but that it is also feared, and that all sorts of efforts are constantly being made to shorten the time during which it is used, while many practitioners seek to do without it altogether, substituting tonics, herbs, iodide of potassium, etc.

This, I believe, is not rational, unless mercury is a harmful thing.

It is acknowledged that mercury is more or less a specific against the poison of syphilis. If, then, it can be shown that mercury may be so used as to be a tonic in its action, logic compels the conclusion that mercury should be used in all cases of syphilis, mild and severe,—mild, because it cannot harm the patient, while it makes his symptoms lighter,—severe, because it moderates the element of severity, and may prevent serious loss of tissue or of function.

2. Syphilis is one and the same for all, modified by constitution, diathesis, and surroundings, varying in its symptoms according to the soil in which it grows: therefore, as the disease is one, so should the treatment be, modifications in treatment being directed towards individual peculiarities: the individual must be treated as well as the disease.

I am aware that some gentlemen in high position have decided against the influence of diathesis as modifying the appearance and course of syphilis. This I cannot understand. In my own observation it certainly is not true.

There is but one syphilis. Malignant syphilis and mild syphilis do not exist as separate entities. I have not time to discuss here why syphilis is mild in Portugal, is said not to be capable of thriving at all in Central Africa, is intense in certain parts of South America, and occasionally, when introduced into a new district, takes the form of a scourge. I mean to say that in a given community, like this, for instance, there is only one syphilis. Two

men acquire it from the same source: the one has it severely, the other barely has enough symptoms to make a diagnosis from, and this independently of whether either of them has a single or a multiple primary lesion. The quantity of the poison absorbed does not regulate the result, any more than does the quality of the poison.

Both of these men may infect their wives, and the one with severe syphilis is just as likely to transmit a mild syphilis as is his more fortunate companion. This is notoriously a fact, and I need not stop to defend it. Every observer with a large field constantly meets with just such instances.

How is it possible to account for this except on the ground of soil? Syphilitic seed on a scrofulous soil tends to yield pustules and ulcers running a slow course, bone disease culminating in caries. The same seed on gouty soil tends to yield dry scaling lesions very obstinate in character, mouth lesions, neuralgic affections, joint troubles, and brain and nerve disease. The tendency towards phagedæna and malignant forms of syphilis, although distinctly attaching to members of the same family, is not, in my experience, due to the existence of any yet described form of diathesis. A florid, healthy-looking youth is just as likely to suffer from phagedæna as a broken-down old man, but phagedæna is not transmissible to another subject as phagedæna. The tendency to it is a physical personal peculiarity.

If, then, my grounds are again tenable, and syphilis is one and the same, except in so far as it is modified by diathesis, habits of life, and surroundings (for dissipation and irregularities of life intensify the number, duration, and severity of the outbreaks)—if this is so, I repeat, then one and the same treatment is applicable to all cases of the disease in which it is well borne, countless outside modifications being required to meet peculiarities constitutional, diathetic, depending on habits of life, surroundings, and special conditions of body and general health.

3. Mild continued treatment by mercury meets all the general indications of the disease as a whole, and has the extra advantage of being itself tonic.

Since the disease—syphilis—is a continuous malady, with periods of symptomatic outbreak, the specific treatment should be also used continuously in a mild way, with periods of increase to meet the outbreaks.

. This is the form of treatment in the main which I have employed systematically for fourteen years, and thus far to my entire satisfaction, and, I believe, to that of my patients. Many of them are married, being in every instance, thus far, the parents of healthy families.

The treatment is the simplest in the world, but requires intelligence on the part of the patient for its success. I invariably explain the whole matter to the patient, and usually inform him that he must consider himself his own physician-in-ordinary, retaining me as a consultant. I put him on some form of mild mercurial in small dose, usually in pill form. Often the form is the centigramme granule of the protiodide of mercury, made by Garnier and Lamoureux. This does not always agree, and then I choose from among the vast number of other preparations of mercury until a suitable one is found. The patient is instructed how—commencing mildly—he is gradually to increase his mercurial dose on every third or fourth day until he perceives the irritative or the toxic effect of the drug. Then, when he has light diarrhœa or slightly tender gums, he reports, has the dose noted down as a "full dose," to be used when required,—perhaps aided by a little opium,—and he is instructed to cease all treatment for a couple of days, and then to take up a steady dose of one-half to one-third of the full amount which he is capable of digesting.

This one-third or one-half amount, varying according to the patient's constitution and the quality of his symptoms, I have found to be a tonic in nearly all conditions of health or disease. I therefore name it the "tonic dose," and this dose I endeavor to get my patient sufficiently interested in to cause him to be willing to take it constantly for a period of from two and and a half to three and a half years.

Intelligent patients will do this; those who lack intelligence or are not careful about themselves, or lack perseverance, and those who are not convinced of the necessity of so long a course and its harmlessness, will fail. The latter are much more troublesome patients in the end than the class first mentioned.

This treatment I have called the "tonic treatment" of syphilis, so naming it because, over and above its specific quality, it yet has the great advantage of being tonic. It is not in virtue of its tonicity that the treatment is useful. Other medicines are more tonic, but on that account they are by no means suitable to be relied upon to combat so grave an enemy as syphilis.

That the treatment is tonic I think is proved by the investigations I have published in the *American Journal of the Medical Sciences*, January, 1876,* showing a long series of experiments with the hématimètre. I need not occupy your time now by reverting to any of the facts established there. Those facts have never been controverted or seriously shaken, so far as I know. On the contrary, they have been all the more firmly established by a long and laborious series of experiments undertaken in Germany by Hermann Schlesinger. The essay is an exhaustive one, and received a prize from the medical faculty of Göttingen. It is entitled "An Experimental Inquiry into the Action of Continued Small Doses of Mercury on Animals."† Schlesinger's experiments extended over a period of a year and more. They were performed upon animals, and confirm my conclusions in every respect upon those animals which responded to mercury as man does. Schlesinger found that sheep, goats, and hens did not improve under mercury, but that rabbits and dogs did, dogs giving the best results. A number of very interesting experiments are recorded, the most interesting one being that of a dog who was kept in an open cage for a year and continuously dosed with mercury in a moderate way. This animal gained twenty pounds in weight, and his blood-globules increased from 9,000,000 to 12,000,000 in the cubic centimetre. The amount of uric acid in the urine did not increase. This dog, although kept in a cage, could not get his normal amount of exercise, and when, at the end of a year, being overcharged with fat and unused to exercise, he was let loose, he got sick, and had a diarrhœa for fourteen days, which reduced his weight and the number of his red blood-cells. The dog recovered, however, without intermitting his dose of mercury, and when killed was healthy in his tissues and organs. He had more fat than usual between the muscular fibres of the heart, but the fibres themselves were unaltered, the valves were normal. There was a patch of atheroma upon the aorta, but this was not found in any other of the dogs experimented upon. Fatty degeneration was found in the straight urinary tubules, but the glomerules and all the vessels were normal, while secretion had been perfect. It is hard to say how much of the pathological changes in this animal were due to lack of proper exercise for a year. It is also impossible to know but that the quantity of mercury administered was more than the dose which was a proper tonic for the animal in question.

Certain it is that the tonic mercurial dose in man does not lead to any obvious unnatural accumulation of fat (as it did in Schlesinger's dogs), and many patients whom I formerly had under continuous mercurial treatment for three years are still occasionally seen by me seemingly in perfect health long years after their treatment, and exhibiting no evidences of fatty degeneration of any of their tissues or organs.

The tonic action of mercury is therefore, I think, established, although Schlesinger denies it, stating his belief that the continued use of small doses of mercury exerts a restraining influence upon the process of oxidation, and thus retards the destruction of red blood-corpuscles and leads to an accumulation of fat. He asserts (after Petrowski) that iron when acting as a tonic increases the number of red cells, the weight of the body, the heat, the pulse, and the excretion of urea. Mercury does not act in all these ways: therefore, says Schlesinger, it is not a tonic; but this is a distinction without a difference. If animals and men, sick and well, free and in confinement, thrive upon it in minute doses, increase in vigor and in the number of their red blood-cells without receiving harm from it in their tissues or organs, I maintain that the medicine is a tonic in the fullest sense of the term.

My belief, then, is that a mild mercurial course, when well borne by the stomach, is always tonic, that it is also always specific in its action as counteracting the poison of syphilis: therefore I believe it constitutes the proper basis of treatment through all the stages of syphilis.

It follows without saying, and I need

* The Effect of Small Doses of Mercury in Modifying the Number of the Red Blood-Corpuscles in Syphilis.

† Archiv f. Exp. Path. und Pharm., Bd. xiii. Heft v. p. 317.

not delay you by enlarging upon the fact, that hygienic and general tonic, diathetic, constitutional, and individual personal treatment must go hand in hand and be intelligently combined with the specific continuous general treatment in all cases; and that special symptoms and special outbreaks constantly require special therapeutic attention throughout the course.

4. The abortive treatment: there is none yet known, the claims of which have been satisfactorily demonstrated. An individual does not always acquire syphilis when exposed to it. I have known more than one instance where two men have cohabited with the same woman on the same night, and one has become poisoned while the other escaped, a solid skin and cleanliness being evidently the salvation of the latter.

But let an individual once fairly receive the poison into his tissues, and I believe that he is syphilitic, and so remains in spite of any local treatment applied at the point of entrance of the poison. Berkeley Hill's well-known case proves this,* in which, twelve hours after intercourse, an abrasion was deeply cauterized by Hill with fuming nitric acid without at all interfering with the development of syphilitic chancre under the scar of the cauterization one month later. Numbers of true chancres are constantly being destroyed with nitric acid immediately on their appearance, but syphilis is not averted. Every one in the way of seeing syphilis encounters such cases very often.

The question of the possibility of aborting syphilis by a thorough excision of the primary lesion (chancre) has been seriously raised of late, and had powerful advocacy. Essayed first in 1840 by Meyer, then by Heuter in 1867, and with varying claims of success by Ulrich, Coulson, Langenbeck, Thiry, Vogt, Kuszlinski, Otis, and others, it did not take shape as a serious proposition until the elaborate article containing records of thirty-three excisions appeared from the pen of Auspitz in 1877.† Excluding ten doubtful cases, Auspitz claimed for his excisions success in fourteen out of the twenty-three remaining cases. Kölliker‡ followed with eight excisions, claiming to have averted subsequent syphilis in three; then Thira, with three cases,§ two of which, it is claimed, remained well. The reports of these cases did not carry conviction, and in reviewing them in the *Annals of Dermatology* I suggested some of the probable errors in diagnosis, for which I received a rather rough criticism in pamphlet form from Herr Auspitz.

Since then Zeissl‖ has come out to affirm his belief that chancre denotes that already general infection has occurred, and to record five chancres excised by himself, in which cases secondary symptoms developed in the usual manner.

Next comes Henri Leloir,¶ who gives a full history of the subject, condemns excision, and quotes the opinion of Ricord, rendered orally to him, that the destruction of a syphilitic chancre at any period of its existence, even effected by amputation of the penis, would not avert the appearance of secondary symptoms in due course.

Chadzynski,** of Lemberg, brings the subject up to July 25, 1880, by collating one hundred and forty-one cases of excision of primary induration, thirty of which he personally observed. In seventy-seven cases no secondary symptoms appeared. Auspitz, however, followed Chadzynski's article in the next number of the Annals, claiming that his (Auspitz's) essay had been incorrectly reported, thus throwing discredit on the whole of Chadzynski's paper. Finally, in the present year Mauriac†† comes forward with seven cases in which excision was practised from the fourth to the eighteenth day. In one case the chancre was excised fifty hours after its first appearance. In every case secondary syphilis followed.

It is plain, therefore, that no reliance can be placed on the excision of the initial lesion to abort or to avert syphilis once acquired. It is even possible that all the reported successes were either gummata of the penis, or some lesion other than syphilitic chancre, which was excised, the unfortunate error of diagnosis depending upon reliance on the exploded notion that an indurated ulcer on the penis, a so-called hard chancre, is necessarily syphilitic in its nature. The fallacy of reliance on the simple induration of a sore to prove

* On Venereal Diseases, London, 1868, p. 67.
† Vierteljahresschrift f. Derm. u. Syph., iv. 1877, 1 and 2, p. 101.
‡ Centralbl. f. Chirurgie, 1878, p. 801.
§ Centralbl. f. Chirurgie, 1879, p. 385.
‖ Wiener Med. Presse, Nos. 27, 28, 29, 1880.
¶ Annales de Derm. et de Syph., i., 1880, p. 69.
** Ibid., July 25, 1880.
†† Gaz. des Hôp., 1881, Nos. 7, 10, 14.

its syphilitic nature has been long since demonstrated.

5. The question of mercury *versus* iodine; of patients who can take neither. The value of the preparations of iodine, and the objection to their use early in syphilis.

My limits of space this evening compel me to omit all consideration of when to begin treatment, when to end it, and the questions of prognosis and of marriage, in so far as they are influenced by treatment. I pass at once to the drugs employed.

Iodine and mercury need alone detain us: sarsaparilla, stillingia, and tajuya are not specifics. Mercury is very valuable in shortening the duration of chancre, and in those cases where confrontation leaves no question as to the nature of the sore, it may be appropriately employed. A reasonably full dose is better than the tonic dose for this purpose, because a specific action is required.

During the period of second incubation the tonic small dose of mercury is all that is called for, with such hygienic, dietetic, and ordinary tonic means as the individual case requires.

During the whole of the secondary outbreak most cases demand mercury alone, —the full dose when the eruption is present, the tonic dose when it is absent.

The intermediary eruptions do better on a mixed treatment,—mercury with the iodides while the eruption is out and for a short time afterwards, the tonic mercurial dose alone being necessary during the intervals of eruption, in my opinion.

In the so-called tertiary stage,—that of profound gummatous lesions of the integument, and interstitial and gummatous changes in the deeper structures, bone, brain, and nerve lesions, etc.,—the more purely gummatous the lesion the more iodic does the treatment need to be, and the less mercurial. All interstitial proliferative changes of the internal organs, however, seem to me to demand mercury in considerable quantity when these changes are progressing, in moderate doses when they are fading, and a mixed treatment for a certain period afterwards,—the longer as the lesion has been more severe and more difficult to master. After a cure is reached, the iodides may be dropped and mercury alone employed in a tonic dose as formerly for a considerable period to terminate the treatment.

The object of this last course is, if possible, to clinch the cure and guard against relapse. My observation has tended to convince me that, however powerful the iodides are in controlling symptoms, they have much less ability to ward off relapse than mercury. I endeavored to bring out this point in an essay on the treatment of syphilis read in this city before the Centennial Medical Congress in 1876,* and must refer any one interested to that source for information as to the grounds upon which the belief is founded.

Finally, for those mysterious after-attacks, eruptions, ulcers, bone and joint affections, brain and nerve lesions, which come on in some cases long after all symptoms have disappeared and all treatment has been intermitted,—these usually require a prolonged mixed treatment with iodides in excess. It is my custom, after such attacks have been overcome, to institute a somewhat prolonged simple mild mercurial course, to avert, if possible, further relapse.

The preparations of iodine, especially the various iodides, are more or less useful in all stages of syphilis, but not so useful as the mercurials, except in case of gummatous lesions, where they easily take the first rank. This much may be safely said of the iodides, that they are generally quite actively tonic when digested properly, that under their intelligent use appropriate symptoms disappear very promptly, that relapse of symptoms is not so much interfered with by them as by a properly directed mercurial course, that as a rule they influence the earlier symptoms of syphilis much less than the later symptoms.

Another point about the iodides is this: the more destructive and severe the early symptoms of syphilis, the more good do they receive from the iodides. Malignant syphilis, serious throat and mouth ulcerations in early secondary disease, bone and nerve lesions in secondary syphilis, yield more promptly to a mixed treatment with iodides in excess than they do to mercury alone, as a general rule. After such lesions have been subdued by a mixed treatment, I think it is well to return to a simple mercurial course while awaiting further developments. An objection to using iodides early in syphilis, unless there is some

* Transactions of the International Medical Congress, Philadelphia, 1876, p. 726.

special call for their employment, is that by so doing we squander our resources. Some patients grow acclimated, as it were, to the iodides, just as they do to quinine or tobacco. They sometimes become unable to digest it, but more often grow used to it, so that when it is required no ordinary dose suffices, and the patient's stomach suffers, or his skin, or his kidneys. I have known a patient who at one time could tolerate very large doses of the iodides become incapable of taking a dose of one grain without having his stomach upset and at once showing purpuric spots on both legs below the knees. The case is, of course, exceptional, but it represents a class. The iodides are too valuable to be played with; therefore it is better to trust to mercury, which does the work well, and to hold the iodides mainly in reserve for emergencies and for especially severe symptoms.

Some patients, on the other hand, cannot take mercury into the stomach without experiencing great depression or suffering some physical discomfort. Such patients sometimes tolerate very kindly a little mercury taken through the skin by inunction in the shape of one of the oleates, or, better still, in the form of corrosive sublimate dissolved in alcohol, a quarter to half a grain in the drachm, spread over the surface of the body once a day and allowed to dry in. I have one patient who is seemingly depressed even by this form of mercurial medication. Many patients cannot digest one form of mercury (the protiodide, for instance) who do perfectly well on some other form, blue pill or bichloride. Where the iodides cannot be taken at all, as in two cases I have seen where extensive bullous and fungating eruptions were caused by their use, and in such cases as the remarkable one recently reported by Pellizzan,* where it causes eruptions of bullæ, of which many cases have been reported of late† (Bradbury, Virchow, Boinet, Bumstead, Ringer, Cazenave, Hutchinson, Taylor, Fournier, Duhring, Hyde, Van Buren and Keyes, Otis, Tilbury Fox, Finny, Duckworth, Farquharson), or where severe iodism ensues, an attempt should be always made to educate the stomach up to a capacity for digesting the iodides, so that the latter may be employed in case of need. This I have succeeded in doing in a number of instances by using mild iodides first (especially the iodide of starch), in combination with diuretics (acetate of potash, Bethesda water).

Farquharson believes that defective kidney elimination is the most efficient cause of iodic eruptions; and Pellizzan agrees with him. In this connection it is well to recall Atkinson's‡ admirable article on the effect of the iodides in producing and maintaining kidney congestion and giving rise to occasional hæmaturia and to the appearance of casts and of albumen in the urine. In these cases Atkinson customarily found oxalate of lime in the urine. Imperfect elimination of the iodides has doubtless much to do with occasioning the kidney congestion, with albumen and casts in the urine, sometimes encountered during a course of the iodides. I have noticed it a number of times, but I do not regard it seriously, because I have always observed the albumen and casts disappear after the iodides have been given up.

The very excellent method of giving the iodides to which Seguin§ has lately called attention is worthy of extensive trial. I have found it of considerable service. It is simply this: to give the iodide without syrup in a feebly-alkaline solution and upon an empty stomach. The best vehicle seems to be a draught of artificial Vichy water. Many patients will be much less disagreeably affected by the iodides taken in this form than in any other that I have employed.

The iodide of starch is a preparation that needs further trial. The best in common use is made from raw wheat starch by what is known as McCall Anderson's formula. I have had some made by the same formula, using cooked rice starch. The product promises well as a substance reasonably easy of digestion and producing palpable effects. Whether the rice-flour iodide is better than the wheat-starch iodide, I cannot say. The iodide of starch is by no means so powerful or so useful as the iodide of potassium or the iodide of sodium, where the latter agree with the stomach.

My time has expired, and I can only refer, by mentioning them, to two very important facts in the treatment of syphilis in any of its stages: they are the serious

* Archiv of Derm., 1881, July, p. 264.
† Fox, Hutchinson, and Thin have each seen a death occur during the bullous form of iodic eruption.

‡ Am. Journ. of Med. Sci., July, 1881, p. 17.
§ Archives of Medicine, August, 1881, p. 34.

evils of over-treatment and the great value of local treatment for isolated lesions. Excess of mercury is bad, very bad. To it is due the bad reputation which mercury has in the eyes of the community at large.

Excess of the iodides is equally bad, if prolonged. It thins the blood, produces purpura, deranges the stomach, and may (possibly) injure the kidneys. I have known the symptoms of nervous syphilis to be indefinitely prolonged by maintaining high doses of the iodides, and to cease when the treatment was changed.

Moderate treatment should be the aim; moderate treatment used for a long time.

Finally, local treatment is of much use. Rather than run up the treatment from the tonic to the full dose, if there are persistent mouth, throat, palmar, or cutaneous isolated lesions, it is, I believe, much better to continue the moderate dose of the mercurial, and by the local use of stimulating mercurial applications to hasten the disappearance of the lesion which is annoying the patient and keeping his attention concentrated upon his malady.

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## CITRATE OF CAFFEIN IN CARDIAC DROPSY.

BY F. H. MILLIKEN, M.D.

DURING my term of service as resident physician in the Philadelphia Hospital, the use of citrate of caffein was suggested by Dr. James B. Walker in the treatment of a case of cardiac dropsy then in the medical wards. The result obtained in this case induced me to make a further trial of the drug.

I will present the histories of several cases treated in this way.

*Case I.*—Mrs. M. M., 33 years of age, tailoress, was admitted to the Philadelphia Hospital May 27, 1880. She was in good health fifteen years ago, when, after a severe wetting, she was attacked with articular rheumatism, the disease involving in succession the larger joints of the body, leaving many of them distorted. This, her first attack, lasted four months. Her joints slowly regained their proper proportions, so that she was able to earn her own living for six years, when, after exposure, she was again attacked with rheumatism. This attack lasted two months, and left the joints swollen and distorted, resembling rheumatoid arthritis. She noticed nothing wrong with her heart after these attacks. Two years ago, rheumatism again set in, due to overheating herself in a cold room. This attack lasted two weeks, was not so severe as the others; and, on account of poverty, she did not seek advice. She soon complained of fluttering and pain at the heart, and shortness of breath. A physician told her she had heart-disease, for which she sought treatment in the hospital.

I did not see her when she first came in; but the nurse and the patient both told me that the lower extremities were swollen. One week before she entered hospital, she could not walk a block without being compelled to rest on account of palpitation of the heart and dyspnœa. Her feet and legs were distended, and the abdomen half full of fluid, the dulness on percussion extending to the umbilicus. The lungs were comparatively free of râles, but dyspnœa was marked; the face was pale and puffy; the extremities cold; the pulse weak, compressible, and irregular. On examining the heart, the aortic valve was found healthy, the pulmonary healthy, but the sound accentuated; a loud mitral regurgitant murmur could be heard, and with care a presystolic murmur could also be detected. The urine was scanty and high-colored; no albumen; bowels constipated. The patient could not rest in the horizontal posture, on account of dyspnœa, and was compelled to sleep in a large arm-chair. Her sleep at night was broken by dreams, sometimes of a frightful character. Naturally she was sweet-tempered and kind, but at times she was so irritable that quarrelling was the order of the day.

In the treatment of the case, digitalis was given in increasing doses. This steadied the heart somewhat, but did not affect the dropsy. Squill, hot-air baths, jaborandi, hydragogue cathartics, pricking the legs with needles, and like means were tried to get rid of the fluid, and with some little success; but the treatment was so exhausting to the patient and so generally unsatisfactory that it was abandoned. At this stage of the case Dr. Walker advised the use of caffein, three grains three times a day.

No good result was noticed until the second or third day, when, to my surprise, I found the heart more regular and quiet, and the patient said she felt better and was passing more water. The dropsy soon commenced to disappear, her legs were not so tense, the abdomen was not so distended, and the line of dulness was lower. The dyspnœa was no longer a cause of anxiety. The heart was now beating 120 to the minute, but was still irregular. We now resumed the digitalis,—still continuing the caffein,—and by its means brought the heart down to 96 per minute. The patient was now able to sleep in a semi-horizontal position, and was no longer disturbed by dreams. The rest of her history is, unfortunately, soon told, for, on attempting to rise to meet me at the door of the ward, she fell dead.

*Case II.*—Michael S., 30 years of age, laborer, family history good, was admitted to Philadelphia Hospital June 12, 1880. Had pneumonia three years and syphilis five years ago; never had rheumatism; had not been a hard worker at any time in life; had been complaining of pain and palpitation of heart and dyspnœa for a year and a half. He never noticed any swelling of the feet or face until April, 1880, when he found his shoes were getting too tight to wear with comfort. He had had slight swelling of the eyelids four or five times, but this soon passed away. His legs were swollen, measuring at thigh twenty-six inches and at calf seventeen inches, painful on pressure, and pitting easily. The abdomen was distended with fluid, measuring forty-one inches in circumference, the dulness on percussion extending to one inch below umbilicus. Bronchial râles were plainly heard, and the breathing was labored. The heart was irregular and the impulse weak; the aortic valve was normal; the pulmonary sound accentuated, but otherwise healthy; the mitral valve was diseased, and a loud regurgitant murmur could easily be heard. The pulse was weak and compressible, beating 130 per minute. The face had a bluish cast, and the extremities were cold. The bowels were constipated. He passed more urine than natural, pale in color; no trace of albumen.

This man was put on caffein, three grains four times a day; and, as the bowels were constipated, a pill containing one-eighth grain elaterium and one and one-half grains extract hyoscyamus was given twice a day for several days. This soon produced profuse watery passages, and tended to promote the rapid absorption of the caffein by emptying the blood-vessels. A note taken two days later showed the heart more regular, the dyspnœa improved, and the œdema slowly disappearing, and the patient feeling decidedly better. He was then given tinct. digitalis, gtt. xx t. d., and the caffein continued. I was away from the hospital for three days, and during my absence no note was taken of the case. When I returned, his heart was irregular but still improving; pulse, 102 per minute, compressible, but stronger than it was; dyspnœa very slight; extremities warmer. Abdomen measured thirty-six inches in circumference, thigh twenty-four inches, and calf fifteen inches. The man continued to improve, and at the end of two weeks he left the hospital to go to the country. Since that time I have not seen or heard of him. A note taken at the time of discharge showed a mitral murmur, but the heart greatly improved; no dyspnœa; sleeps and eats well; the bluish hue of face gone; temperature of extremities natural; swelling of the abdomen and feet almost gone; bowels regular, and feeling better in every way.

*Case III.*—Miss J. R., 23 years of age, shirt-maker, came to the medical dispensary of the University of Pennsylvania, August 4, 1881, on account of palpitation of the heart, dyspnœa, and swelling of the lower extremities. She had complained of palpitation and dyspnœa for three years, but never had any swelling of her legs until July, 1881. She had rheumatism one year before this. She complained of weakness and fainting; had no sickness of stomach or headache; no pain in back or pain on micturition, but passed large quantities of pale urine; bowels regular. Extremities were always cold. An examination of the chest showed the apex-beat to be in the sixth interspace, a distinct impulse in the second and third interspaces, and pulsation in vessels of neck. Auscultation showed the aortic valve to be healthy, pulmonary sound accentuated, but the valve otherwise healthy, and the mitral valve diseased, a systolic and presystolic murmur being heard. The left auricle was hypertrophied; pulse irregular,—160 beats per minute. The legs were swollen with fluid, were painful, and pitted on pressure. She could not walk any distance, on account of dyspnœa and palpitation. Appetite poor; does not sleep well, and feels miserable. Urine was ordered for examination. Prescribed Basham's mixture, fʒij, and tinct. digitalis, gtt. xx, three times daily.

August 10.—Patient reported herself somewhat better; heart was quieter, but still irregular; œdema not improved; no albumen could be detected in urine. Discontinued Basham's mixture, and gave, in addition to the digitalis, citrate of caffein, gr. iii, three times a day.

August 19.—Much improved. Heart more regular; dyspnœa very slight; swelling of legs and feet entirely gone, and feeling better in every way.

When this woman came to the dispensary, she was wearing large slippers and loose stockings; and when she reported on the 19th of August, she was wearing a close-fitting and neat shoe that had been worn before there was a sign of dropsy. Shortly after this my attendance at the dispensary ceased, and I have not seen the patient since.

I have tried caffein in several cases of dropsy having a renal origin, but have met with no success whatever.

3614 Walnut Street.

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Cystitis.—℞ Acidi benzoici, sodii biboratis, āā gr. x; inf. buchu, ʒij. This amount three or four times a day.—A. J. C. Skene, M.D.

This may almost be called specific in its influence in the earlier stages of cystitis, affording rapid and lasting relief. The diet should be carefully regulated, and the skin and bowels kept in active condition.

## EXAMINATION OF INDIANS AT THE GOVERNMENT SCHOOL IN CARLISLE, PA., FOR ACUTENESS OF VISION AND COLOR-BLINDNESS.

BY L. WEBSTER FOX, M.D.

THIS examination was made with a view to ascertain the relative standard of vision and defect of color-sense among Indians. Snellen's test types were used, and the color-test similar to the one advocated by Dr. William Thomson. Each eye was examined with the ophthalmoscope.

Twenty-seven different tribes represented, comprising 161 males, 89 females, their ages ranging from 8 to 22 years.

The following is a tabulated form of the results of the observations:

| | |
|---|---|
| Catarrhal ophthalmia | 10 |
| Keratitis | 2 |
| Phlyctenulæ | 1 |
| Pterygium | 65 |
| Post. choroiditis | 20 |
| Strabismus conv. | 1 |
| Opaque nerve-fibres | 2 |
| Persistent hyaloid artery | 1 |

| | |
|---|---|
| Emmetropia | 237 |
| Hypermetropia | 4 |
| Myopia | 6 |
| Astigmatism simp. hypermetropic | 3 |

In a large school of this kind frequent outbreaks of catarrhal ophthalmia occur, especially as new pupils are constantly being admitted from the reservations. Once being manifest, the disease is easily communicated. At present it is limited to the recent arrivals from Colorado.

The large number of cases with pterygium—thickened and elevated portion of the conjunctiva of the eyeball, in nearly all cases limited to the inner canthus—is due, no doubt, to the constant exposure to the sun, sand, and alkali-dust; and is not limited to one tribe particularly, but found more frequent among the South-west Indians.

Posterior choroiditis limited to the temporal sides of the optic disks, crescentic in shape, with slight deposit of pigment. This disease was observed principally among those who had attended school for over two and a half years.

Those afflicted did not have the acuity of vision that existed among those without the disease.

Optic disks full, and the absence of physiological cups was striking: only in a very few cases, among the Creeks, were they to be seen. Retinal vessels and pigmentation of choroid similar to those seen in dark-complexioned persons.

Opaque nerve-fibres and persistent hyaloid artery typical.

The large number of emmetropes remarkable. It was found that not only $\frac{20}{20}$ was read with accuracy, but the letters of $\frac{20}{15}$ discerned. Four cases of low degrees of hypermetropia, none above 2D; six of myopia, and three of simple hypermetropic astigmatism.

Color-blindness existed in three cases, two being half-brothers, sons of a Cheyenne chief, having different mothers, the third of the Sioux tribe.

The color-blind examination was conducted as follows. Wools of different shades used. In the first test a pure pale green was given, and all pale shades of this color were expected to be placed side by side with the sample. If a mistake was made, for example, gray or buff, mauve or pink, added to the green, the person was deficient in color-sense. To determine whether he was a red- or green-blind, the second or rose test was given; if to this were placed dark blues or violets, and scarlet with dark greens or browns, the person was red-blind, while those matching the rose with grays or greens, and scarlet with light browns or greens, were green-blind. The cases found were pronounced, none standing in a position intermediate between the two groups. Small pieces of colored papers 1 mm. square were recognized at one-third greater distance than by whites.

Color-blindness is associated with an inferior average of intellectual power among whites, as statistics show that the higher the degree of intelligence or social standing the less amount of defect is found. Among the Eton College boys (England) 2.5 per cent., and in deaf-mutes of this city 10 per cent., while among the deaf-mutes of England and Ireland I found 13 per cent. of pronounced cases. Of 161 male Indians tested, 1.8 per cent. found. In female deaf-mutes and Indians the percentage did not exceed that already found by other investigators,—0.4 per cent.

This defect may exist in any person, as an accidental variation due to a developed defect, either in eye or brain, also that its slightest forms might be due to a lack of education in infancy. There can be no doubt that we can account in this way for the higher acuteness of color-vision among

females, their tastes and earlier development of the observing faculties leading them to an earlier mastery of color, and, as with females, the Indians of both sexes have for ages paid great attention to colors, their war-paints and ornaments, bead-work, etc., being of pronounced tints.

The acuteness of vision of nomadic tribes has long been noted. In this school the few that were deficient were found among the semi-civilized Creeks.

The result of this examination shows that education has a tendency to make peoples short-sighted (myopic), and that color-sense can be developed.

The first evidence of progressive myopia is posterior choroiditis, and this is made manifest by subjective symptoms.

Posterior choroiditis begins by hyperæmia of the choroid, and nearly always of the optic nerve, and it is at this point—*i.e.*, where the choroid surrounds the nerve on the temporal side—that we find it.

Owing to inflammatory action, intraocular tension is necessarily augmented, and the sclerotic, which participates with the pathological process, loses its power of resistance, yields, and the length of the eyeball increased, myopia consequently developed.

It has long been known that myopia occurs with unusual frequency among inhabitants of certain countries. Some writers have considered it mainly due to the type of frontal or cranial development, others to excessive employment of the eyes at near work. Pupils examined at different times show progressive myopia to an alarming extent, and so long as the exciting cause—undue application of the eyes in badly-illuminated and poorly-ventilated school-rooms—is kept up will we develop a nation of myopes.

The Creek Indians, who are by far the most civilized, show this commencing defect, while the Sioux, Kiowas, and Modocs are free and have escaped all taint of myopia.

As it is now well known that forty males in every thousand are pronounced color-blinds, and that education can lessen this defect, it should be made part of the curriculum of primary schools to have pupils daily taught to assort different colors, as well as to have their surroundings of brilliant tints. Educate the color-sense. Color-blindness in practical life becomes a very weighty matter. The colored lights that are used as railway and maritime signals happen to be those that the majority of color-blinds are deficient in,—red, green, and white; and recent investigations of accidents have induced the impression that not a few are caused by the color-blindness of engine-drivers or lookout-men. We have but little doubt that our government will sooner or later follow the example of others, and demand a systematic examination of the color-vision of all persons entering such services.

*Résumé.*—Certain diseases exist among Indians due to climatic influence.

Acuteness of vision is better as a whole than among whites.

Errors of refraction and intraocular disease developing among the elder pupils (those that have attended school for several years) and among the semi-civilized tribes, showing that excessive employment of the eyes in youth to near work has a tendency to develop myopia.

Indians are less subject to color-blindness (males 1.8 per cent.) than any class of peoples thus far examined, and their acuity of color-sense is attributable to an earlier education of color in infancy.

*Peculiarities.*—The palpebral aperture smaller than in whites, as well as an apparent diminution in the size of the eyeball, which is also deeper in the orbit, flatness of the cornea, shallow anterior chamber, and smallness of the pupil.

1322 Spring Garden Street.

## NOTES OF HOSPITAL PRACTICE.

### UNIVERSITY HOSPITAL.

*CLINIC OF DR. LOUIS A. DUHRING, PROFESSOR OF DISEASES OF THE SKIN.*

Reported by Henry Wile.

*EPITHELIOMA OF THE SKIN.*

A WOMAN, about 55 years old, has a small ulcer on the right side of her nose. It is very superficial, about twice as large as a split pea, and covered with a very slight crust, beneath which can be seen a scanty secretion that presents a glazed appearance. The ulcer is irregular in outline, sharply defined, possessing a distinct and slightly elevated border. The base is of a light-red hue, and slightly uneven. Altogether, there is little excavation. It has existed for three years, developing from a mere scratch or accidental abrasion of the surface of the skin.

The patient states that there was no papule of any sort at the seat of the lesion, and that there was no pain or itching experienced at any time.

The diagnosis is easy. It is a case of epithelial cancer of the skin, and, being superficial, and of a very mild type, easily curable. In the treatment of this disease, the object is to remove the diseased part. This may be done by means of the caustic, the knife, or the curette. The use of the last is, I think, especially indicated in this case, as the lesion is of a very superficial character.

This mode of treatment was introduced ten years ago by Volkmann, of Halle, for the removal of all superficial new formations, and has been extensively employed in lupus vulgaris. The idea was somewhat ridiculed at first, but after a time the good results were so apparent as to cause this mode of treatment to become more and more favorably recognized by practitioners. It has been employed in this clinic very often, and generally with good effect. The pain is not so severe as one would suppose, and the operation is attended with but little hemorrhage. As has been already said, the superficial character of the lesion renders it well adapted to this mode of treatment, as does also the fact that there is little inflammatory areola. The philosophy of the operation is plain: it is a simple removal of diseased tissue, leaving only a healthy ulcer, which will heal rapidly by granulation.

*SCROFULODERMA.*

A young man, 21 years of age, and printer by occupation. He gives the following history. His health was formerly good: there is no family history of tuberculosis. Last winter he began to suffer from a severe cough and loss of flesh. In the spring he began to spit blood, and, being examined by a physician, was told that he had a cavity in one lung. No chancre or other skin disease previous to the present lesion. This first showed itself last Christmas in the form of a large swelling over the back of the right hand, with pain in the little finger and ring finger. The middle of the swelling gradually rose above the surface, and remained as a bright red swelling, without suppuration, for several months. At the end of that time (May last) the patient began to poultice and paint it with iodine. After a month of such treatment a pin-hole-sized orifice made its appearance, from which a little pus could be squeezed out. This hole was followed by the appearance of others, until by an incision the ulcer assumed its present form. It is now about one inch long and three-quarters of an inch wide, has an irregular, red, and slightly elevated border, and the inflammation gradually shades off into the surrounding healthy skin. The surface of the ulcer is of a bright scarlet color, and covered with a puriform secretion. Through the centre runs a shallow groove, which is filled with a yellowish secretion, and on the right side of this groove the surface is somewhat higher than on the left. Generally it has a smooth and velvety appearance.

*LUPUS VULGARIS.*

A girl, 15 years of age, of Italian parentage. We notice that the lesions are remarkably extensive, being spread over the right cheek, and extending on to the neck and thorax, and down the left thigh and leg to the ankle.

The disease in this case had been of ten years' standing, having begun on the right side of the face. Three years after the onset the disease made its appearance on the left knee, and subsequently it extended both upwards and downwards. We see traces of extensive lesions on the neck, where the glands are involved and numerous scars are apparent. The patient states that there was more or less discharge from these glands, especially during the winter. It is unusual to find the glands affected in this disease.

Six months ago, when the patient first came to us, the lesions were discrete and confluent, in some places of a dull red color, in others of a reddish brown. On the face we noted several small split-pea-sized tubercles, covered with thin scales; while on the neck, besides the discoloration, there were several ugly cicatrices.

On the left leg, from thigh to ankle, there were extensive lesions in the form of a copious eruption, characterized by variously sized flat tubercles, disseminated and grouped, isolated and confluent, forming variously sized patches, some of which had already broken down and were slightly crusted; others had gone on to further change, and partial cicatrization had taken place. In some of the old scars we noticed new lesions appearing; while we also observed in the leg, besides a more or less

excoriated appearance and crusts, an hypertrophic condition, resembling elephantiasis. This is a rare complication in lupus vulgaris.

At this clinic lupus vulgaris occurs chiefly on foreigners. It is common in Southern Germany and Italy, Austria and France, but is rare among native Americans.

The lesions in this case were almost too extensive for local treatment at the clinic, and at first we gave small doses of iodide of potassium,—two or three grains three times a day. This treatment was kept up for the past six months, and with very good results. During the summer months there was some extension of the disease on the lower jaw, which went on to suppuration and is now in the process of healing. Altogether the appearance of the lesions is much improved, the lesions on the face being not so well marked as those on the thigh. There is not so much swelling and thickening as there was, and the color is also not so dark.

Iodide of potassium is a valuable remedy in lupus vulgaris, and its administration is often attended with good results. It generally acts better in small doses of three to five grains than in larger ones of ten to fifteen grains.

Where the lesions are so extensive as in this case, local treatment is almost out of the question, on account of the difficulty of carrying out the same. Were the patient in the hospital, however, we should of course employ local treatment. When, however, new lesions make their appearance, we must attack them at once, and there is no better way than by means of a curette.

The iodide of potassium will be continued, and during the winter the patient will be put on cod-liver oil.

*EPITHELIOMA OF THE NOSE.*

An old man, 70 years of age, with an epithelial cancer on the left side of the nose.

Having the history of the case, I will present it briefly, presenting as it does some peculiar features.

The patient came here in 1877 with a sore on his upper lip. The diagnosis was epithelioma. It was treated with caustics, and healed readily. In 1879 he came again with two lesions, one under the left eye, and one on the right cheek. These were treated with caustic potash, and likewise healed. In 1880 he presented himself a third time, with a new patch of disease, which was excised. All the formed scars remained healthy, and in none of them did a recurrence follow. The present lesion has appeared in an entirely new place, and has existed, according to the patient, about four months. It is a little larger than a pea, is somewhat irregular in shape, but sharply defined and surrounded by a raised border, which shows the disease is extending and the neighboring tissue is becoming infiltrated. On the right side of the ulcer, just within the border, is a small tubercle. The ulcer is covered with a dirty yellowish crust, which I will remove to see the condition of the base. The base is moist, and gives evidence of having secreted freely. The surface is quite smooth and even, but the induration is marked.

The treatment is obvious: the diseased part must be removed. This may be done by means of caustic, knife, or curette. In this case I will use the curette or scraping-spoon, which is efficient where the lesion is not extensive or deep-seated, as in this case.

*TUBERCULAR SYPHILODERM.*

A man, about 40 years of age, presents an ulcer on the nape of his neck. It is about three inches in diameter, nearly round, and in a state of deep ulceration. The ulceration extends deep down, involving even the trapezius muscle. The central part of the ulcer has a smoky brownish-red color, while the peripheral parts are of a brighter red.

The surface is uneven, being deeply excavated in the centre, the excavation being fully two inches in diameter. The periphery of the patch is more or less regular in outline, and is studded with variously sized tubercular patches.

The ulcer is sharply circumscribed, has a raised border, is covered with a copious secretion, with but little crusting, having been recently covered with ointment. The lesion first made its appearance in the year 1872, in the form of a pea-sized tubercle. This gradually grew larger and larger, being better and worse from time to time, and probably not being recognized, and consequently not properly treated, developed into its present condition.

The patient states that for the last six

months it has been steadily growing worse, having used all kinds of ointments without apparent benefit. It is a marked case of tubercular syphiloderm. The history in such cases is often obscure or impossible to get at, as the cutaneous eruption follows the initial lesion late, there being frequently an interval of five, ten, or even twenty years. The treatment will consist in the administration of the iodide of potassium in large doses for three weeks, after which time I will combine with the iodide of potassium the biniodide of mercury. Under this treatment the patient will entirely recover.

Locally, I would advise the following ointment:

℞ Hydrarg. præcipitat. alb., gr. xx;
Ung. zinc. oxid.,
Vaselin., āā ʒss.
Misce: fiat unguentum.
Sig.—Apply twice daily.

I would also advise patient to wash the ulcer once daily with Labarraque's solution.

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## PHILADELPHIA HOSPITAL.

*SERVICE OF H. C. WOOD, M.D.*

Reported by JAMES P. TUTTLE, M.D.

*CLOT, WITH SECONDARY SOFTENING.*

JAMES DOUGHERTY; admitted October 15, 1881; æt. 30; Irish; a mechanic by trade. He had been working in a rolling-mill. Last April he noticed his appetite failing, and also that he was becoming "short of breath." The latter symptom increased until he was unable to work on account of it. About seven weeks since, while sitting on his bed, in daytime, patient fell unconscious to the floor, in which condition of unconsciousness he remained until the following day. When he recovered consciousness he found himself unable to use his left arm and leg. Upon admission, he was unable to use either left leg or arm at all. When he was admitted, the muscles of arm and leg were relaxed, the cardiac rhythm was very irregular, and the sounds feeble, especially the first. Percussion-area was abnormally enlarged and the apex-beat diffused.

The joints of the paralyzed limb were not red or swollen, but they were tender to touch, and the knee-joint anteriorly somewhat puffed up. Neither face, tongue, nor palate showed any sign of palsy.

Up to time of death (December 4) patient's conditions were unchanged. Paralysis of arm and leg remained complete, with no evidence whatever of rigidity developing in the muscles. Charcot's "ankle clonus" was not at any time present. The intellect was unimpaired up to time of death, a few minutes before which he was complaining of the patient next him snoring so that he could not sleep. At 4 A.M., December 4, when nurse emptied his urinal, he complained of some pain in his *stomach*. It was not severe, however, and he did not wish the resident physician sent for; but at 4.45 the nurse, in making his rounds, found him cold and dead, neither of the patients next him having heard or seen a struggle, although both awake.

*Post-mortem.*—Abdominal organs and lungs normal. Cardiac tissue soft and flabby, with evidences of fatty degeneration. The right ventricle considerably dilated, but with no marked lesion of the valves. The brain showed no evidence of meningitis or effusion; neither were there any lesions of the cerebral convolutions, cerebellum, pons, or medulla observed; in the right lateral ventricle a large centre of rusty-colored matter, involving in its superficial area the corpus striatum, tænia semicircularis, and optic thalamus. On section, it proved to be softening, and involved the central portion of the caudate nucleus, the entire breadth of the internal capsule, and the anterior superior portion of the lenticular body. The softening did not extend into the convolutions nor into the other ventricles, which all seemed normal.

*BONY DEPOSIT IN THE FALX—SOFTENING IN THE PONS VAROLII.*

E. E. H.; colored; æt. 74; cook; admitted to hospital (paralytic ward) January 27, 1881. Had gradually but steadily lost power in his left leg and arm. At time of admission, loss of motion on that side was complete. Sensation was impaired but not destroyed. There was no incontinence of urine nor involuntary passages of fæces. Patient ate well until within a few days of death. Up to this time there was no change in his condition, except an uncontrollable tendency to ulceration from the slightest abrasion on the disabled side. He was able at all times to use his right arm and leg, and at no time was there any symptom of affection of that side. He

died, without a struggle, a few minutes after being put to bed, December 18, 1881.

Post-mortem examination showed heart, lungs, and abdominal organs normal. There was some distention of the sinuses and veins of the meninges, and the Pacchionian bodies were very prominent. There was some but not a large amount of effusion under the arachnoid. In the falx cerebri there were found embedded four pieces of bone. The largest of these was pyramidal in shape, with flat base, three-quarters by one-quarter inch; its edges serrated. Its height was about one-quarter inch, its surface smooth, and its top directed to the left side in the anterior region of the convolution of the corpus callosum. The others all resembled it in shape, and were situated on about the same level, with their bases to the right and the tops *all* pointing to the *left hemisphere*.

The arteries at the base of the brain were atheromatous and brittle, but no rupture or embolic stoppage of them was discovered. In the lateral ventricles there was some effusion, more marked in the anterior and descending horns of the right side. Over the floors of the lateral and fourth ventricles there was seen a granular excrescence resembling boiled sago. Otherwise, the cerebrum and the nuclei at its base were unimpaired, as were also the cerebellum and medulla oblongata. The most superficial transverse fibres on the right side of the pons were slightly discolored, and longitudinal sections of that body showed a centre of brownish-colored softening. Beginning just below the tubercula quadrigemina, it spread over almost the entire anterior width of the pons for one-half of an inch downwards. On the extreme right side it involved the tuber annulare proper to the depth of three-eighths of an inch, but, as it passed over to the left side, it extended less and less deeply, till it involved only the transverse fibres of the pons proper, thus forming a wedge-shaped centre of softening, with its butt to the right and its edge to the left side of the anterior surface of the pons Varolii.

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COMMUNICATION OF SYPHILIS BY SKIN-GRAFTING.—At a recent meeting of the Société Médicale des Hôpitaux de Paris, M. Féréol related the following curious instance of the above:

A man, aged 49, suffered from gangrenous erysipelas of the upper third of the left thigh, which left a large obstinate ulcerating surface. On March 7 M. Doubel, the surgeon in charge, applied forty-five pieces of skin, taken from five different persons, to the outer part of the sore. Thirty-three of the grafts adhered. On March 18 twenty-eight grafts, taken from the buccal mucous membrane of a rabbit, were applied, but failed. On March 23 forty grafts, supplied by seven persons, were placed on the internal portion of the ulcerated surface. Thirty of these were successful, and cicatrization was proceeding rapidly, when, on April 5, a grayish ulcer appeared at the site of the first grafting. Other similar ulcers quickly followed, and in three days involved the whole of the cicatrix. About ten weeks after the first series of grafts had been applied (May 19) a copious roseolar rash appeared, and was soon followed by crusts on the hairy scalp and mucous patches in the mouth. About this time the son of the patient, who had furnished part of the grafts on both occasions, consulted M. Doubel, who subsequently discovered that the young man had a chancre eighteen months before, which had not been attended to.—*Medical News and Collegiate Herald.*

A DOME-TROCAR CATHETER FOR TUNNELLING THE PROSTATE, ETC.—Dr. Simon Fitch, of Halifax, in describing a new dome-trocar catheter, says (*New York Medical Journal*), "The main object intended is to make a direct channel through the enlarged prostate, instead of nibbling off fragments of the gland through the floor of the urethra, as is attempted by several contrivances. It will likewise be found most efficient for puncture of the bladder from the rectum, for discharging noxious intra-peritoneal effusions, for antiseptic washing of the peritoneal cavity through the retro-uterine cul-de-sac, for evacuating and injecting ovarian cysts *per vaginam;* and it will be of immense value in supra-pubic lithotomy by opening the bladder from within outwardly."

This instrument is virtually a catheter within a perforating tube. The perforating tube is of metal, and in shape and size similar to an ordinary urethral catheter: one extremity, however, is sharpened like a quill pen, and is provided with a dome to lift the urethra away from its point. The inner tube resembles the curved end of a catheter, and is rounded and perforated at one extremity. It is so constructed that it can by means of a stout wire be projected beyond the end of the outer tube, when it answers the purpose of an ordinary catheter. When the inner tube is drawn entirely within the outer, the point of the latter is exposed, and it then may be used as a trocar.

LIFE UNDER GROUND.—It has been estimated that in Great Britain 378,151 persons carry on underground employment, working in galleries extending over 58,744 miles.—*Medical Times and Gazette.*

PHILADELPHIA
MEDICAL TIMES.

PHILADELPHIA, FEBRUARY 25, 1882.

## EDITORIAL.

### CONSULTATIONS WITH HOMŒOPATHS.

THE New York State Medical Society at its late meeting adopted a resolution which allows consultation with all legally-qualified practitioners,—that is, with homœopaths, eclectics, and the swarm of so-called irregular physicians. Revolutions never go backwards; and, although there were only eighty doctors representing the thousands of the New York profession at the passage of the resolution, yet the action is probably final. The secret springs of it are not hard to discern. In New York City there are many wealthy families whose attending physicians are homœopaths, but who might have afforded in the past, and now will afford in the future, sundry well-paid and lucrative consultations to the specialists of the regular profession. The resolution once adopted by the State Society, these specialists will soon intrench themselves behind the walls of habitual practice; and even if the State Society in the future were to desire to dislodge them, the power would be wanting. It is plain that the resolution will bring the New York State Society into conflict with the American Medical Association; but the issue of this conflict can hardly be considered doubtful. There is money upon one side, none on the other. The New York specialist can afford to do without the American Medical Association better than he can afford to forego the dole of some Fifth-Avenue nabob who is under the spell of an unscrupulous irregular. The specialist has some fear of the State Society, but none of the far-distant, almost intangible thing called the American Association, which controls no consultations. Having committed his own Society to a course of action, he can probably hold it; and so long as he can do this, the American Medical Association may censure as it pleases.

The effect of a practice or ethical custom firmly established in such a centre as New York upon the general profession of the country must in the course of years be very marked, especially as interest will draw the medical leaders into sympathy with such metropolitan trade habits. John Jones moving to Philadelphia from New York will smile most grimly at what he calls a provincialism of the profession; lay journals will abuse most roundly the doctors of their own city who are so far behind the times; medical men who have command of editorial columns will write in their own interest articles on free trade in medicine; and the old-fashioned, honest, straightforward physician, who looks upon medicine as a profession and not as a trade, will have his public life made so miserable that he will draw himself into his own private shell and give up the conflict.

### INTERNATIONAL ENCYCLOPÆDIA OF SURGERY.

IT is said that Sydney Smith once, when asked about a review of a book, replied, "Of course I have not read the book. When I write a review I try to keep my mind free from prejudice." The reviewer who takes other than Sydney Smith's plan with the huge International Encyclopædia of Surgery, now being published by William Wood & Co., of New York, under the editorship of Prof. Ashhurst, of this city, will have little leisure on his hands for some months. The object of this work, says the preface, is to furnish in a comprehensive and yet not unduly extended form a systematic and practical treatise upon all those subjects which are properly considered to pertain

to the science and art of surgery. Comprehensive the six enormous volumes will no doubt be, but whether unduly extended or not may be a question. Yet things are not always what they seem; and those of our readers who were subscribers to Ziemssen's Cyclopædia may be prepared for the publishers' power of making the most of much. The first volume before us is certainly a sumptuous book,—a ponderous royal octavo, with extraordinarily thick paper and excellent clear type; but no thought has been given by the publisher to making the size seem less than it is, or getting two volumes into one. Comparisons are odious; but it may be stated as illustrative that the single volume of the United States Dispensatory does not look as large as that of the Encyclopædia, but has in it nearly as much matter as four of the surgical volumes. That a book like the present following directly upon Ziemssen's can be successful speaks very well for the greed and power of the American profession as buyers, as well as for the enterprise and skill of the publisher.

The articles in this first volume are by Prof. S. Stricker, of Vienna; Profs. W. H. Van Buren, F. Delafield, J. Lewis Smith, of New York; Profs. A. Stillé, D. Hayes Agnew, John Ashhurst, and Drs. W. S. Forbes, William Hunt, John H. Brinton, C. T. Hunter, of Philadelphia; Prof. A. Verneuil, of Paris; Prof. H. M. Lyman, of Chicago; Prof. Christopher Johnson, of Baltimore; Surgeon-General P. S. Wales, U.S.N.; and Surgeons H. T. Butlin and C. W. Mansell-Moullin, of London. Certainly an array of names; of course the articles are of unequal value, but all are good, and the whole a monument to the present state of surgery,—a monument upon whose ruins some decades from now the children of the present builders may erect the temple of the perfected art.

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BARNUM has an addition to his happy family in the person of a newly-born baby elephant.

## FILARIA SANGUINIS HOMINIS.

DR. MYERS, of Takow, Formosa, has recently added to our knowledge of the *Filaria sanguinis hominis* the interesting results of numerous observations made by himself upon filaria-infected patients.* He instituted these examinations, he tells us, at the request of Dr. Patrick Manson, with the object in view of investigating, and, if possible, confirming, the discoveries and observations made by that gentleman. He endeavored, therefore, to determine the proportion of patients affected, noting the external manifestations present,—*e.g.*, elephantiasis, lymph-scrotum, etc.; the periodicity of appearance and disappearance of the embryos; the cause of the diurnal disappearance, the centre of congregation, if any; the effects of "infilariation" of the monkey. After examining a large number of patients, he succeeded in finding but three in whose blood the filaria appeared, neither of whom, however, presented any appearance of elephantiasis or lymph-scrotum. One of these, a boatman (born in Amoy, To Ah by name), he succeeded in prevailing upon to submit to daily puncturing of the skin, for the purpose of obtaining specimens of blood for microscopic examination. This good-natured boatman, To Ah, was placed under a large mosquito-net, and mosquitoes from all parts of the island were allowed to feed upon him nightly. A trough was suspended within the net, and filled with water, upon which the mosquitoes deposited their ova. This water was given to monkeys to drink, no other fluid being allowed them except that contained in the bananas on which they were fed. Frequent examinations of the blood of To Ah showed the presence of the filaria at night and their absence during a greater part of the day. The temperature, taken at each observation, generally rose slightly with the appearance of the embryos, and fell again with their disappearance. The mosquitoes

* Imperial Maritime Customs Report, Shanghai, 1881.

fed upon To Ah were also subjected to microscopic examination, which generally gave only negative results, the half-digested remains of the embryos being all that could be found. The attempts to filariate the monkeys by allowing them to be bitten by these mosquitoes, and by compelling them to drink water upon which the ova of these mosquitoes had been deposited, both failed, the monkeys eventually dying of tuberculosis, a disease common among those kept in captivity.

Dr. Myers expresses the opinion that the mosquito which plays the part of host to the embryo during its development must be of a different species from those found in Formosa, which digest the embryo instead of nurturing it; and to this fact he attributes the apparent immunity of the natives of that island from the filaria.

In concluding his observations, Dr. Myers made a number of experiments upon the filaria with various drugs, such as arsenious acid, salicylic acid, bisulphate of quinia, and santonin, and was surprised to find that a comparatively large quantity was required to destroy it,—sufficient, indeed, to destroy the patient as well.

Dr. Myers's paper is equally valuable and interesting, and reflects great credit upon its author for the untiring zeal and perseverance with which he has followed up the subject. We would suggest that the experiment be made of changing the hours of rest and maximum light by requiring the patient to sleep in a darkened room during the day, and to note the effect upon the appearance and disappearance of the embryos.

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IN a late number of the *Medical News*, under the head of "Darwinism in Medicine," an assault was made upon the managers of one of our hospitals for appointing upon the staff a physician whose father and grandfather served for many years with great acceptability in a similar position, and who himself had done much work in the hospital ward as substitute. The attack would have come with more grace had not the member of the *Medical News* editorial staff whose style the editorial counterfeits been himself an unsuccessful applicant for the position in a recent canvass; but, under the best of circumstances, it is odd to see ridicule of heredity of talent in a journal whose chief editor carries on his father's work so ably as to prove that at least practical ability, if not genius, may descend from sire to son. Surely long ill-requited services do give a man some claims upon a hospital board, as well as upon a publishing firm,—a claim that should not be allowed to usurp the place of merit, but should have its proper weight in the close balance of advantages and disadvantages which often exists amidst rival claimants.

## LEADING ARTICLES.

### SEWERAGE AND DRAINAGE.

THE history of epidemics in past ages offers innumerable examples of the poisonous effect of that disgusting compound of excreta and refuse matters which has received in modern times the name of sewage, when it is retained in the neighborhood of human habitations. The disposal of sewage has, therefore, long been one of our great sanitary problems, but the results of recent investigations made in this city—which lend support to the theory that the fungous spores or germs of diphtheria (and probably of other contagious diseases, as shown by Pasteur) can multiply in filth outside of human bodies—render this question of paramount importance from a hygienic point of view.

Hence we consider an able and painstaking report on sewerage works in Europe, by Mr. Rudolph Hering, of this city, which forms Supplement No. 16 of the valuable publications emanating from the National Board of Health, a most opportune production, and invite the earnest attention of our readers to the following abstract of its contents.

The two chief methods which human

ingenuity has so far devised for disposing of refuse materials are "dry removal" and "water-carriage." According to the first of these plans, waste products are gotten rid of by removal in mass, either after disinfection or without such precaution; in the second method, sufficient fluidity is secured by adding water to insure the continuous flowing off of the whole mixture through properly prepared channels. The former mode involves the important disadvantage of more or less prolonged temporary storage of excreta, etc., in the vicinity of habitations. Cess-pits, except for isolated rural residences, are always dangerous, and in some European cities are entirely prohibited.

As in certain localities it is difficult or impossible to obtain a supply of water abundant enough for water-carriage, the dry method, although objectionable in some respects from a sanitary as well as a pecuniary point of view, demands a brief notice. The well-known dry-earth closet is an illustration of this system in its simplest form, and Mr. Hering says it can be recommended under certain conditions for small country towns, villages, and isolated dwellings which are without proper water-supply or sewerage. In many cities on the continent of Europe offal is received in tubs, casks, or pails, which are removed at intervals of from one to seven days, an effort being made to prevent the escape of effluvia as well as the access of oxygen, which would promote decomposition. In Paris the "fosse filtre" is still much employed. This consists of a suitable vessel, holding about twelve gallons, so divided by a sieve, which forms a vertical partition, that the fluid matters of the excreta are separated and by a further arrangement are allowed to flow off into sewers. Parisian engineers, who generally favor the water-carriage plan, consider this method a convenient transition, educating the public up from the unmitigated foulness of the common pail system as it is too often met with. In some parts of Southern Germany, however, where the pail—or rather cask—system is exceptionally well managed, it has many advocates, and our author, whilst admitting its comparative safety if the containing vessels are removed at least once in three days in air-tight vans and thoroughly cleansed at the depot, would restrict this mode of sewage-disposal to small towns, houses where water-closets cannot be used, situations where sewerage would be very costly, and those where surface-drainage is admissible.

Mr. Hering next proceeds to consider water-carriage or sewerage proper. The first sewers in modern European towns were formed by arching over natural waterways, but these, especially after the introduction of a domestic water-supply, often became places for storage rather than conduits for removal of filth, and hence extremely foul and disgusting. Under such circumstances it was suggested in England that the addition of human excrement could not render the sewers any more repulsive or injurious to health, and the convenience of this method rapidly rendered it popular.

It was, however, still opposed, and experience soon proved that unless the channels for the combined filth and storm water were well adapted to their purpose, much better than the average sewer of old times, nuisances were speedily developed. This led to what is now known as the separate system, a plan in which the rain-water and fluid waste were carried off in the old-fashioned large drains, and the excreta and other filth were disposed of through a new and much smaller system of pipes. But in England, especially where the sewers are numerous and the rivers small, such a method of water-carriage for excreta led to so much pollution of the drinking-water that purification of the sewage before it entered the rivers became an absolute sanitary necessity. At first extravagant hopes were entertained that some means could be discovered by which purification could be secured, and at the same time a valuable manure obtained; but at the present time enough experience has been gained to prove that, whilst several modes give good and economical results, none will afford a large profit.

Our author announces himself as a strong advocate for the system of water-carriage as a means for disposing of excreta, etc., claiming that it is capable of answering every economic and hygienic requirement, and asserting that the adverse opinions of prominent sanitarians, such as Dr. Miller, of Berlin, and Winterhalter, of Munich, are based upon the examination of badly-designed or antiquated sewers, which modern sanitary engineers equally condemn. He admits, however, that the question of cost depends very much upon

local conditions, and that dry removal might be more economical in small towns on very steep and irregular slopes, with bed-rock near the surface, or where the site is a long narrow strip on the shore of a wide river, or in an inland town with a very cold climate, and where, from the absence of a large stream, the sewage must be purified.

Coming now to the detailed consideration of the varieties of the water-carriage system, it is to be observed that the "combined method" is intended to remove all the rain-water in conjunction with all the sewage in a single channel. According to this plan, therefore, there is constructed a net-work of sewers of sufficient capacity to carry off all the storm-water, as well as all the waste and excreta, and consequently supplied with inlets on the streets in addition to those in the houses and yards, these inlets being provided with catch-basins, traps, and ventilating pipes.

The sanitary advantages of a well designed, constructed, and maintained system of sewers on the combined plan, are the cleansing effect of more or less frequent flushing by storm-water, and the much better opportunity afforded for inspection and cleaning. The objections to it as urged by advocates of the separate system are that the unequal rapidity of the flow during storms and in fair weather, leads to deposits which choke up the conduits, although this disadvantage can be overcome by building the sewers of an egg-shape in section, and of such a size that the invert radius is about as small as the semi-diameter of a tube which would be half filled by the average current of sewage without any rain-water. The filthy coating of slime, largely made up of microscopic organisms, forms more abundantly upon the inner surface of sewers constructed upon the combined system, but, on the other hand, can be much more readily removed, on account of their larger calibre. Whilst it is admitted that ordinary circular sewers of large diameter cannot be so easily cleansed by flushing as smaller pipes, our author maintains that by adopting the inverted egg-shape form it is quite possible to secure the great advantage thus gained.

Under some circumstances the impure air from the capacious sewers of the combined system will be much greater in amount, so that it is more important that these larger conduits should be properly ventilated,—a desideratum which should never be sought for by the aid of water-pipes from the roofs of houses. One of the most important objections to the combined system appears to have escaped the notice of Mr. Hering, namely, that the upward pressure of the air, compressed by the inflowing of a large bulk of storm-water, drives sewer-gas through most of the traps in use by plumbers, and pollutes the air of dwelling-houses, often with dangerous or even fatal effect. Finally, when the sewage must be purified by filtration or otherwise, the additional bulk of the storm-water is disadvantageous, although less so than has been claimed.

From an economical point of view, the saving of the combined system is considerable, because the cost of constructing sewers to carry off the rain-water alone will be almost as great, and the expense of an additional set of pipes for sewage will in general far outbalance any reduction upon the pecuniary outlay for the combined plan. Still, when an old system of sewers which has been outgrown by the needs of the community for which it was devised can be utilized, or when the storm-water can be disposed of by surface-drainage, the separate system, which is now on trial upon a large scale at Memphis, Tennessee, may prove highly satisfactory.

This separate method is offered for our examination in three forms, denominated respectively the Ordinary, the Shone, and the Liernur. The ordinary variety is that of dividing the sewage from the bulk of the storm-water by allowing each to flow in its own set of pipes. Mr. Shone, of Wrexham, England, proposes to modify this plan by using compressed air to lift the sewage over obstructions, or to higher levels when necessary. His suggestions are still *sub judice*.

The Liernur method is simply an extension of the principle used by our own Odorless Excavating Company, the pipes being permanently laid in connection with a central receiver kept exhausted by a steam air-pump. The peripheral extremities of the sewers are kept closed by means of barometrical traps so arranged as to leave only enough sewage in the tubes to seal them. This in itself would be enough to condemn the method, unless obviated by automatic flushing apparatus; but the plan is said to be in successful operation in some towns of Holland. Its cost would

probably confine it to a few localities where the level surface is an obstacle to procuring sufficient grade for common sewers, such, for example, as is found in the site of New Orleans.

In comparing the value of these different methods of sewage-disposal, our author concludes that either, if properly instituted and efficiently managed, is capable of fulfilling the chief sanitary requirements, and that the choice of a system for any particular locality will therefore depend in great measure upon the relative cost, under special local conditions modifying their construction and maintenance. Frankfort, London, and Berlin furnish good examples of the "combined system" of "water-carriage;" Oxford and Reading, in England, and Memphis, in our own country, illustrate the "separate system;" whilst the best working of the "Liernur" plan may be seen in Amsterdam.

Mr. Hering devotes several pages of his exhaustive essay to describing the designs and construction of sewerage-works under the three diverse conditions,—1st, that the sewage is to be discharged into a large river, near its mouth, or into the ocean; 2d, that it undergo purification at or near its outflow; and, 3d, that it is to be immediately disposed of at this latter point. The alignment of sewers must, of course, depend upon the inclination of the ground, as when a town is built upon both sides of a river, a large intercepting sewer upon either bank, receiving smaller tributaries with "radial" terminal branches, will suffice. The smallest size for common sewers on the continent is eight inches, and from this diameter up to twenty inches vitrified pipe is used. Above this magnitude there is a sudden increase to conduits sufficiently large for a man to enter, and any further increment is proportioned to the estimated amount of fluid to be transported. In calculating the calibre of a system of sewers on the "separate" plan, the sewage is assumed to equal the water-supply of the town. In the combined system provision must be made for the maximum rainfall in addition, and the formula of a Swiss engineer, Mr. Bürkli-Ziegler, is recommended.

The rapidity of flow in a sewer should not be over six feet per second, or about four miles per hour, in order to avoid useless wearing away of the structure.

The shape of a sewer in transverse section should be circular for those which are too small to be entered, and egg-shaped, with the smaller end down, for those of larger calibre. The grade varies with the size of the conduit, being about one foot in fifty for the house-connecting pipes, and diminishing to one foot in one thousand for the larger, and one in four thousand for the largest conduits. As it is important to avoid the coating of the perimeter of sewers with slimy decomposing filth (*seil haut* of the Germans) by having the internal surface smooth, vitrified pipes are advised for the smaller, and concrete for the larger sewers. Inferior to these, but much less costly, is well laid and jointed brickwork. Junctions of sewers should be made at as small an angle as possible, and, to avoid the deposit of solid matter in eddies, the so-called "tongues" of the construction material should be formed by continuing the inverts until their respective surfaces meet. Among the appendages of sewers are the *inlets*, the external apertures of which should be carefully grated, furnished with catch-basins, and trapped; *man-holes*, which vary from two feet square to three feet in diameter and are placed at an average distance from each other of about three hundred feet; *overflows*, to get rid of superabundant storm-waters; and *outfalls*, which require closing with tidal flaps or flood-gates, when at or near the sea.

Human intelligence has not yet solved the difficult problem of properly ventilating sewers. Our author seems inclined to rely upon the natural forces which influence the movement of air in these conduits, although he admits there may be instances, like that of Brighton, England (where ventilation is secured in a two-mile intercepting sewer by fires kept burning in a chimney-stack three hundred feet high, at one end of the sewer), in which artificial ventilation is requisite.

This important document closes with numerous practical observations upon the cost of construction and modes of maintenance of sewers, and also in regard to the disposal of sewage, respecting which Mr. Hering declares that where it must be purified before it is discharged into a stream, the most satisfactory method is by irrigation of sewage-farms, such as those near Paris, provided suitable land can be purchased at a reasonable price.

Attached to the report are three useful appendices, the first giving a detailed ac-

count of the sewerage-works of eleven European cities, and furnishing a body of recently collected downright facts, which must prove of immense value to sanitary engineers, and the third supplying an elaborate bibliography of the whole subject, classification according to authors being, as a rule, adopted.

## PROCEEDINGS OF SOCIETIES.

### OBSTETRICAL SOCIETY OF PHILADELPHIA.

STATED MEETING, FEBRUARY 2, 1882.

#### SPONGE TENTS.

DR. ALBERT H. SMITH.—It is not necessary to dilate upon the necessity of mechanical dilators for the neck of the uterus, both as a means of diagnosis and as an important therapeutic measure.

The original sponge tents were made from a flat piece of sponge, saturated with wax and pressed flat between pieces of marble. This form of tent is comparatively useless, as it expands in one direction only. The first suggestion of the present form was, I think, by Dr. Sims, in his work on Uterine Surgery. His method consisted in immersing a conical piece of sponge in a strong mucilage of gum arabic, impaling it upon a wire skewer and winding it tightly with a cord, after which it was hung up to dry, when the cord and skewer were withdrawn and the tent smoothed with sand-paper. If the cord was wound on the sponge with sufficient tightness to give the tent useful expanding power, great difficulty was experienced in withdrawing the stylet. I was led to make a few changes in the method, and now employ a cylindrical piece of sponge, which is saturated with water only, and, without any stylet, is wound with a piece of fishing-line, to which a six-pound weight is attached. This compresses it thoroughly, and its form is easily given by the fingers during the process of rolling. The surface should be made as smooth as possible by means of sand-paper.

The tent should be of uniform size from end to end. If it is conical, the tent is introduced as far as possible, but only the small part, without much dilating power, enters the internal os, and it is not unfrequently withdrawn unexpanded, while the external os and the cavity of the cervix are widely dilated. The sponge selected should be strong and fine. I have seen tents made from coarse, rotten material, which would break during the extraction, leaving portions within the cavity of the uterus.

The introduction of medicating materials into an internal cavity of the tent is objectionable, as they usually corrode the sponge, and the space and loose winding necessary to allow the removal of the stylet reduce materially the dilating power. The curved shape is useless, as the uterus can be straightened before the insertion of the tent, and less force is needed for the insertion of a straight one.

To prepare the uterus for the introduction of a tent, first use a dilator of soft metal, or a graduated wax bougie, to straighten the cervix and measure the length and calibre of the uterine cavity, noting tortuosities, etc., then rapidly introduce the largest tent possible, having first coated it with an enamelling material—as soap—and immersed it in a box of salicylic acid in fine powder, which is to be rubbed in thoroughly to form an antiseptic paste over the tent.

A sponge tent thus prepared may be allowed to remain *in situ* for forty-eight hours without developing any unpleasant odor, unless there is breaking-down tissue which may overpower the disinfecting powers of the acid.

For ease in inserting I have had constructed a peculiar powerful forceps to hold the tent clamped tightly and enable the operator to pass it rapidly to its position. Hot-water injections after the tent is in position will expand the sponge rapidly and fix it in about a minute. If pain follows the insertion, it can be controlled by opium suppositories.

*Time of removal.*—If the tent is removed at the end of twenty-four hours it will cause hemorrhage, because the spongioles have buried themselves into the cervical tissues, which grasp it tightly, and a forcible extraction will drag away portions of the uterine tissue and leave a raw and absorbing surface. But at the end of forty-eight hours the tent comes away easily without any bleeding. The contractile power of the uterus still remains at the end of twenty-four hours, and the presence of a finger or application in the cavity of the uterus causes rapid contraction. At the end of forty-eight hours the uterus is paralyzed, all pain has ceased, and local irritability is less. When the tent is removed, wash out the cavity of the uterus with tepid salicylated water, and, if necessary, introduce a second tent.

Among the advantages of the sponge tent is its slowness of dilatation,—not slowness of expansibility. The power of the laminaria tent is greater as a dilator, but it will slip from the uterus as soon as it has ceased expanding, while the sponge tent will remain as long as it is wanted to. The sponge has also a disintegrating power over morbid surfaces. The healthy tissue will contract again, but diseased structure will not contract, but will slough off, its vitality being destroyed. The sponge being porous, discharges will pass through it.

The usefulness of the sponge tent is for both exploratory and therapeutic purposes. It causes less pain than the laminaria tent,

and after its removal there is less tendency to contraction, and is thus more satisfactory for exploratory preparation. The sponge has a stimulant effect on the uterine parenchyma, and in cases of chronic metritis and hyperplastic enlargement it will cause a reduction of bulk. In one case, after the prolonged use of internal applications of iodine, nitric acid, etc., the repeated use of sponge tents resulted in a complete restoration to the natural size. In cases of stenosis the laminaria tent may be preferable, and I prefer it to cutting operations or the use of powerful steel dilators. In one case, years ago, I introduced a sponge tent, in my office, and allowed the woman to walk home and keep about her daily duties. The menstrual flow came on two days later, entirely without pain, for the first time in the patient's experience; the flow escaped through the sponge, and the latter was then removed. Conception occurred before the next menstrual period. The sponge tent is also the safest agent for the destruction of granular growths of the endometrium. A patient had been bleeding profusely at every period for three years. Supposing a polypus to be the cause, a sponge tent was introduced to secure dilatation. A finger was introduced into the uterus, but, finding no polypus, more tents were passed to the fundus. Fungoid growths of the endometrium were broken up by the tents. I was disappointed in my expectations of finding and removing the supposed cause of the hemorrhages, but was agreeably surprised to find the patient remain well after the uterus contracted. Another patient was sent to me from Boston for diagnosis only. I obtained permission to use a tent for exploratory purposes. I dilated the uterus with the largest sponge tent passed to the fundus, introduced my finger, and found fungosities on the anterior wall, but the means intended for exploration resulted in a cure.

In a case of polypoid pediculated growths, I at once dilated with sponge tents after the use of the wax bougie; the finger found a pediculated growth as large as a hen's egg, but the tent had disintegrated it, and it could be removed by the finger without instrumental aid.

Dr. E. L. DUER described a method of preparing a sponge tent expeditiously. Take a clean sponge of cylindrical form, dip it into melted wax or paraffine, and compress it into form as it cools. Tents may be introduced, when speculum and forceps are not at hand, by wrapping the string attached to the tent around the forefinger of the right hand, and inserting the thumb-nail into the base of the tent. The first and second finger of the left hand are passed behind the cervix; the tent is then introduced into the os uteri, and the left hand being quickly transferred to the abdomen, counter-pressure is made and the tent forced home.

Pain following the insertion of a tent is frequently the consequence of pressure upon the fundus, and if the tent be withdrawn about one-fourth inch the pain will be relieved. The sponge tent is, without doubt, one of the most powerful means for the reduction of uterine hypertrophy.

Dr. PAUL F. MUNDÉ agreed with Drs. Smith and Duer that sponge tents were indicated in uterine hypertrophy and granulations of the endometrium. He has never had any bad results from dilatation of the uterus by mechanical dilators of any form; but he has withdrawn very offensive sponge tents after twenty-four hours' use, and feared danger might be near, and wished to avoid it. He can get tupelo tents of any size; it dilates not too rapidly, but regularly and strongly, and he preferred to use them, as he was afraid of sponge tents.

In a conversation at Richmond, Va., last May, Dr. Smith said that he had views of his own, and thought the sponge tents were unreasonably looked down upon.

Dr. Mundé agreed with Dr. Smith as to the method of application. He always made use of three steps in the insertion of a tent. He placed the patient in Sims's position. The cervix should be exposed properly and seized by a tenaculum; then the tent, being properly held in a strong forceps, is dipped first into a jar of liquefied carbolic acid, then into a jar of vaseline, and then rapidly passed into the previously cleansed uterine cavity,—quickly if the tent be not too large: if there be any point for it to catch upon, it will catch. At the end of twenty-four hours he always removed the tent; and it was pretty nasty sometimes. He always dreads some bad result, but has been fortunate so far, and has not seen any. He now uses the tupelo tent, and treats it in the same manner that he previously did the sponge tent. It is easily introduced; it becomes fastened in a few minutes; its effects are good; the patient does not complain of much pain; it does not imbibe so much as sponge, and does not sink into the uterine tissue as the latter does; but it is not so efficient in reducing the size of the hyperplastic uterus, for there is nothing else so good as sponge for that.

After a tent is removed, the uterus should be thoroughly cleansed.

In cases where the sponge was successful for the relief of sterility, a tupelo or laminaria tent would have probably done just as well. A sponge tent increases discharge and causes local irritation, and its removal involves loss of epithelium, and for these reasons it is not generally so good for relief of sterility. As the sponge tent is rough, it sticks, and is introduced with great difficulty, if it be of large size in proportion to the calibre of the internal os.

It is a maxim that a sponge tent must not be introduced into a fresh wound; and does not the dilator or bougie cause a fresh wound?

The sponge tent is undoubtedly the best for

hyperplasia, but all the other indications are filled by the laminaria or tupelo tents.

He had experienced the same difficulty as Dr. Smith in the tapering tent, and had therefore cut off the small end of the tent. A Molesworth dilator is open to the same objection in some cases, not dilating either os, but expanding largely in the space between; the conical tent does the same thing; blunt sponges are very difficult to insert; the laminaria has dilated in the cavities of the cervix and body of the uterus, with an hour-glass constriction at the internal os, and it was withdrawn with great difficulty. The tupelo tent dilates more equally and also more slowly. Sponge tents are also hard to withdraw, and should be twisted before traction is made.

Dr. DUER suggested twisting in one direction only, allowing the grasping instrument to be drawn in by the shortening during twisting until the tent was entirely loose. On one occasion a piece of tent broke off and remained inside the uterus, but it was extruded by uterine action and was found in the vagina the next day.

Dr. J. CHESTON MORRIS had found out the uselessness of conical tents unless inserted in a reversed position; he prefers the cylindrical form. The cases of death from sponge tents were probably due to the use of three successive tents at intervals of twenty-four hours; he prefers to allow a tent to remain from forty-eight to seventy-two hours; he has never had any serious results; but, in consequence of the tents being disagreeable and troublesome, he now uses Molesworth's dilator, and with great satisfaction; but they are badly made, they leak, and are apt to break under necessary pressure.

In one case he burst three dilators before he succeeded in effecting complete dilatation.

He agreed in the usefulness of this method of treatment for hyperplastic enlargement, and thinks that in many cases it acts in imitation of a miscarriage: expansion, then contraction, with the aid of ergot, will cure chronic metritis and enlargement.

He is now using large soft-rubber stems to effect a similar purpose: they gradually overcome the resistance of the internal os and expand it. He has never used the tupelo tent.

In his opinion it is far safer to allow a tent to remain two or three days than one only. In removing a tent, push in slightly at first, and then make traction with a curving motion. He thinks the position on the back far easier for introducing a tent than Sims's position. He has introduced tents in the manner described by Dr. Duer without speculum or forceps.

Dr. MUNDÉ.—Where should tents be applied? At the office. What should be done with the patient after the insertion of a tent? It is very reprehensible to introduce a tent unless a patient can be kept in bed for one or two days after the removal of the tent: this is a very important point. He is accustomed to introduce all tents in the Sims position and through Sims's speculum, and has not succeeded so well on the back, because the tent easily becomes rough if not quickly pushed to its place. He introduces the sound and frequently the hard stem on the back, pushing the uterus down over the stem by pressure above the pubes.

Dr. A. H. SMITH.—Success in the treatment of sterility by means of sponge tents depends upon the relation of the time of insertion to the menstrual period. If used just before the period, it dilates the uterus and expends all its malign influence before the time at which the uterus is expected to receive the impregnated ovum. The tupelo tent fails in fulfilling the indications, as it would not allow the flow to pass through it (unless perforated), and it would not pass beside it if large enough to be of benefit. He had commenced to use tupelo tents when they were first introduced; he found them very spongy and soft, with slight dilating power, and easily constricted by the internal os; he did not find it to have any advantages over the laminaria or sponge tent; it has great powers of absorption, and had the appearance when new of having been used and dried again. (*The tupelo tents are much better made now, are hard, smooth, and have greater power. —Dr. Mundé.*)

Respecting the use of the bougie before inserting a tent. The bougie does not cause a tear or abrasion of the surface. The wax bougies are flexible-pointed and graduated in form; he has never seen bleeding follow their use. He has never used a steel bougie. He considers that there is far less risk than from the use of mechanical dilators, of which he is much afraid.

There is no difficulty in introducing a cylindrical tent, as it dilates uniformly from end to end, and a smaller tent answers the purpose, as the important point is the internal os; that is where the largest amount of tent is needed. He prefers the position on the back: the relation of parts is more natural, and the uterus is more easily straightened by pressure on the fundus above the pubes, making introduction easier.

Tents should never be introduced in the office: it is very reckless: the patient should be put to bed, and cleansing injections should be used.

The further discussion of mechanical dilators of the uterus was postponed to the meeting of March 2.

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MURDER OF AN ASYLUM SUPERINTENDENT.—Dr. E. A. Adams, Assistant Medical Superintendent of the Michigan Asylum for the Insane, at Kalamazoo, was fatally stabbed by a patient in one of the wards while making his daily rounds, January 6.

## NEW YORK ACADEMY OF MEDICINE.

A STATED meeting was held February 2, 1882, Dr. FORDYCE BARKER, President, in the chair.

The minutes of the previous meeting were read by the secretary and approved, after which reports were read by the librarian and members of committees.

Before introducing the speaker of the evening, Mr. CHARLES F. WINGATE, the title of whose paper was, "Practical Points in Plumbing: Knowledge Necessary for Physicians for the Protection of their Patients," the President remarked: One of the avowed objects of this Academy, as expressed in its constitution, is the promotion of the public health. Strictly speaking, all of our scientific work is in this direction; but this meeting is in a larger sense devoted specifically to this object.

There is not a physician in this city engaged in active practice who is not frequently called upon to see disease of various degrees of severity, often resulting in death, which has been caused by a poison. If we can see our patients early enough, we can successfully meet such poisons as arsenic, as corrosive sublimate, as aconite, and all of this class, because we have antidotes which will prevent their effects. But where the poison is introduced into the system so insidiously that the subject is unconscious of its absorption until its effects are produced, then it is not a question of antidotes, but the problem is, how shall we counteract its consequences, and how shall we keep our patients alive until the life-destroying agents have ceased to put in jeopardy the vital powers?

The special poison to which I now refer is the gases resulting from defective plumbing, to which all classes are alike exposed. When I assert that it is a daily experience with me to see persons whose general health is suffering from this poison, as manifested by malaise, loss of appetite and strength, slight febrile symptoms, diarrhœa, physical and mental depression, and that I have seen infants, children, and adults suffering from diphtheria, scarlet fever of a mild type complicated with this disease, and destroying life, I only state facts which are common in the experience of all physicians in this city.

Hotels in the country and at other summer resorts, he said, were places where typhoid fever was not infrequently contracted; and the physician should warn families who hold him responsible for their health, of the danger of every such resort as does not give the evidence of a competent sanitary expert that the house is safe from all such dangers. The occupants of many of the most beautiful and expensive houses of New York were exposed to the poisons arising from defective plumbing.

Mr. Wingate, in the course of the reading of his paper and extemporaneous remarks, expressed his belief, with that of highest medical authority, that the chief duty of the physician was more to protect the people from the contraction of disease—to keep them healthy—than to wait until they became sick and then heal them. Indeed, the term "cure" was coming to be regarded with disfavor among physicians, and the intelligent patient recognized the fact that there was no magic about medicine, and that disease was not removed by incantations or sleight of hand.

Every physician should warn his patients not to lease or buy any dwelling, whether old or new, without having the premises thoroughly examined and obtaining a certificate of their healthfulness. But he had often found the worst of hygienic conditions in physicians' own dwellings. In examining a house as to its healthfulness, nothing should be taken for granted, but everything in the way of plumbing ought to be exposed to view; and if it were impossible to do this, some means or test should be taken absolutely to demonstrate the healthfulness of the building.

The *oil of peppermint* diluted in a pail of water, and poured into an opening above, would demonstrate with almost absolute certainty any leak in the pipes. Imperfections in the details of plumbing showed generally that the whole was equally imperfect.

He referred to sources of dampness in the cellar from imperfect drainage of the yard of rain and snow, from drain-connection between the refrigerator and sewer, from broken or leaky underground drains, from a want of any or sufficient fall in most of these, from disconnection between the perpendicular and the ground pieces. To correct these defects, it should be arranged so that the plumbing could at any time be exposed to view. Another source of dampness in houses in this city was the enormous amount of made land, and, again, cellars almost or quite on a level with watercourses. The soil was further contaminated by broken or leaky gas-mains.

Besides the above sources of bad air, the air supplied to the furnace was usually taken directly from the cellar itself. Many furnaces had no cold-air box at all, and of those that had, the box was usually made of unseasoned wood and was full of leaks, and even of holes large enough to admit the entrance of rats, chickens, and cats, which he had often found there dead and in a state of decomposition. There should be no connection whatever between the refrigerator and the house-drainage, yet in the majority of cases the opposite was true in houses in New York. Garbage, ashes, and the settlings of coal in the cellar were sources of foul air.

If possible, the kitchen should be isolated from the rest of the house, or at least it should be well ventilated. In the boxing of plumbing fixtures much dirt, old rubbish, and even decaying animals were found, and constituted a fertile source of vitiated air. Servants should not be allowed to sleep in basements. The sink and bath-room should have direct com-

munication with the out-door atmosphere. Many instances—and he mentioned some—of fatal disease arose from communication between the water-closet and a sleeping-apartment. Drapery, curtains, lambrequins, etc., caught the dust of the house and absorbed foul air. The more simple and less the furniture, the healthier would be the dwelling. He referred to the rapid corrosion of even the thickest and best pipes by the action of gas.

Many of the existing evils referred to were due to letting out the plumbing-work to irresponsible parties, because they offered to do it cheap, who then, in order to make a profit, used poor material and cut the amount short and did their work imperfectly. The family physician should create a demand, on the part of those who look to him for the preservation of their health, for the best sanitary conditions; and plumbers who have been taught in our training-schools should be employed to do work in preference to others.

Much good might be done by the co-operative building system.

Dr. DOREMUS then demonstrated how easily the thickest brick and stone walls are penetrated by poisonous gases, and referred to the fact that the surgical wards of Bellevue Hospital and certain wards in the New York Hospital some years ago became thoroughly permeated by disease-germs and led to the death of many persons. The remedy consisted in disinfection by the generation of chlorine gas, ozone, bromine, etc. In the basins of water-closets chemicals should be placed that will decompose sulphuretted hydrogen and other vile gases, which might otherwise pass through the water in the goose-neck attached to the basin. The water in the goose-neck had no power whatever to prevent the passage of gas through it into the room.

He spoke with feeling on this subject, for his own son a few weeks ago, when about to assist at a lecture in demonstration of these facts, became poisoned with the foul gases arising from defective plumbing in this city, and died; and another was only just recovering after a long and severe course of illness from the same cause.

Dr. WILLARD PARKER stated that the laws of life and health were omnipotent, and the more we observed them the longer and more healthful would be our days. He referred to the great death-rate from ship-fever in Bellevue Hospital when this fever was prevailing, and to the fact that nearly or quite all of the patients recovered after they began to place them in tents where they had plenty of fresh air. Previous to the introduction of Croton water into this city we had no cases of diphtheria: that disease was traceable to bad air from sewers. It was a great luxury to have the Croton water, but he would prefer to have the old-fashioned wash-bowl and no connection whatever with the sewer.

Drs. VANDERPOEL and JANEWAY, members of the Board of Health, who had been requested to take seats on the platform, made some remarks. Dr. Vanderpoel referred to the importance of drainage of the soil in yards, but which he believed was almost entirely unprovided for in this city.

Dr. JANEWAY would not underestimate the extent to which disease was dependent upon the influence of poisonous gases, but he thought it was more frequently traceable to the same disease existing in another person than some might suppose. It was, of course, well understood that certain diseases, as scarlet fever, etc., were contagious; with regard to the origin of diphtheria in certain cases, however, it was a matter of some difficulty to decide. He mentioned a case which occurred recently in which the disease was undoubtedly contracted from germs carried in a trunk from New York to Florida. He also mentioned a number of instances in which he had been able to trace the origin of typhoid fever to drinking Croton water that had become contaminated by the gases arising from the dejections of a typhoid patient, which had been thrown into the water-closet. Such a contamination of the drinking-water had been thought impossible until he demonstrated the fact that when the faucet below was turned on, from which water had been drunk by these patients, gas escaped from the pipe in the water-closet and other pipes above. Such defects in plumbing were likely to be detected only by the sanitary engineer, not by the ordinary plumber. He spoke of the earnest and efficient labors of Mr. Gallatin, formerly president of the Sanitary Reform Association of this city, in remedying existing evils in this direction.

Dr. PETERS spoke of the great amount of sickness due to the foul gases and sewerage setting back from the still waters of the dock into which the sewers now emptied, and he believed that until they were carried out and made to empty into the river-current, all other efforts to get rid of the evils arising from poisonous gases would be in vain.

Dr. WYLIE then read a communication from Mrs. Hobson, setting forth the object of an association for first aid to the injured. It contemplated a course of about five free lectures to the people on this subject. A similar society, the St. John of Jerusalem, had been in successful operation in England for nearly five years. Resolutions approving the plan, offered by Dr. Austin Flint, were voted by the Academy.

The Academy also voted a resolution of thanks to Mr. Wingate for his instructive paper.

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A STATED meeting was held February 16, 1882, FORDYCE BARKER, M.D., President, in the chair.

The paper of the evening, entitled "*Clinical Observations upon Diabetes Mellitus and*

*Insipidus, with Cases,*" was read by its author, A. A. SMITH, M.D.

Dr. Smith first read the history of four cases of diabetes mellitus observed conjointly by himself and Dr. Barker within the past three years. During the fall of 1879 three patients presented themselves for treatment within one month, giving similar histories. The following is an abstract of the history of the first case.

Mr. X., aged 60 years, suffered for months from mental anxiety, disturbed sleep, restlessness, etc.; a lawyer by profession; was out of the city during that summer, but unable to recuperate his health. Easily became tired from muscular fatigue. His weight was two hundred pounds, which became reduced to one hundred and sixty-five. Had considerable thirst; did not perspire much. He had not noticed any particular increase in the quantity of the urine. Had gotten up at night to urinate as a habit for years. Appetite less than usual, sometimes loathing food. Came for treatment because of disturbed digestion, inability to work well, and mental depression. He had led quite an active life, and had become quite irritable and nervous. Was in the habit of taking champagne and wines of the sweet variety. Had suffered from gastric and hepatic dyspepsia for years. Never had malaria. No hereditary tendency to disease.

Examination of the urine revealed a specific gravity of 1034; considerable quantity of sugar; no albumen; negative microscopic appearance. At the end of three days the quantity passed in twenty-four hours was sixty-five ounces.

The treatment of this, and of the next two similar cases, was the same, namely, codeine in quarter-grain doses three times daily, gradually increased to one grain three times daily; also tincture of chloride of iron, and nux vomica, rhubarb, and extract of hyoscyamus,—the bowels being constipated; water as much as desired. Each patient was given a written list of the articles of food which might be taken, which excluded, as far as possible, articles containing sugar, starch, and the hydro-carbons in general; fat or oily foods were admitted. Under this treatment the quantity of urine greatly diminished from an excessive amount, the specific gravity gradually came down, the unfavorable symptoms of which they complained disappeared, and within a few months the sugar disappeared completely from the urine, and the specific gravity became normal. These patients had always preferred sweet articles of diet.

The special facts to which he would call attention related to the etiology of the disease. It would be observed that all of these patients led a very active life mentally, that they came to suffer from mental anxiety, lived a sedentary life, suffered from gastric and hepatic dyspepsia. These facts and the results of treatment would tend to show that, although there had been no sudden shock or injury to the nervous system, it was in some way concerned in the etiology of the disease. Codeine, which we might suppose would tend to aggravate the dyspepsia if the nervous system had not a bearing in its causation, had had a beneficial effect upon the gastric disturbance. He thought, however, the question was an open one whether disturbance of function, either with or without organic lesion of some other organ of the body, particularly of the pancreas or the liver, might not have a causative influence, or follow as a result of the disease the etiology of which rested in the condition of the nervous system. Other cases were also narrated: one, the history of which was written by Dr. Griswold, went to show that glycosuria, or sugar in the urine, might exist without any other signs of its presence than those revealed by chemical tests.

The paper being before the Academy for discussion,

Dr. FLINT said that diabetes mellitus was either a disease of much greater frequency now than formerly, or else when present it was more frequently recognized. He had had opportunity during a few years past to study the clinical history of quite a number of cases analytically. He agreed with the author of the paper, that if the urine were commonly examined for sugar instead of for albumen and casts only, this disease would be recognized more frequently. He was led to detect diabetes mellitus in one case from a single symptom,—viz., a slight, peculiar sensation at the head of the penis after micturition. Examination of the urine showed the presence of sugar in abundance. In that, and in a number of other cases, the sugar disappeared from the urine in a very short time under the dietetic treatment, and in cases in which this was said to have failed he thought it often due to not being thoroughly carried out. The patient should be given a list not only of what he might eat, but also of what he should not eat, and the series of articles should be so arranged that he would be satisfied, and to do this required considerable skill and trouble and expense on the part of the patient. He had not used codeia sufficiently to be able to speak as to its value. Dr. Husted, who had used the sulphide of calcium, and, as he thought, with great benefit in his own case, recommended it very highly, and he (Dr. Flint) had made use of it in a number of cases apparently with very good results, but since the dietetic treatment was carried out at the same time it was difficult to say just how much influence the medicinal treatment had in bringing about the good results. He related a case illustrating the sudden development of coma, with embarrassment of respiration, which sometimes occurs in this disease. The patient died within a few hours from the commencement of the attack.

Dr. HUBBARD related a few cases in which the treatment had consisted in administration of a tablespoonful of yeast, three or four times a day. The symptoms improved; the amount of sugar in the urine diminished, but never entirely disappeared.

Dr. GIBNEY referred to two or three cases in which diabetes occurred in connection with organic disease of the nervous system, but he did not know that any direct relationship between the two could be traced.

Dr. KINNICUTT remarked that cases were on record of the appearance of sugar in the urine during the presence of a tumor in the neighborhood of the fourth ventricle. A distinct line should be drawn between those milder cases, due to a temporary functional disturbance accompanied by the appearance of sugar in the urine, and which were easily controlled by the observance of dietetic restrictions, and those severer cases, in which, whatever might be the treatment, only little improvement followed, and death from coma and collapse was the final result.

Dr. PETERS agreed with Dr. Kinnicutt with regard to the two divisions, including the milder and more severe types. He thought the basis of the disease was in many cases a vaso-motor paralysis or paresis, and those agents which acted upon that system of nerves were particularly indicated. He considered nux vomica one of the best. In children the disease was generally or frequently fatal; in the aged it was less formidable than in middle life. It was less manageable in the thin, irritable, and debilitated than in the more robust. He also considered it in two stages,—first and second, in the latter being less amenable to treatment.

The PRESIDENT referred to the case of an English peer who was placed under his care by his London physician during a visit to this country. The symptoms connected with the urine were much worse, as were also those of irritability and nervousness, when he most freely violated the dietary restrictions and devoted himself strongly to literary work,—as writing poems, speaking in Parliament, etc. By following the directions of the physician the urine could be rendered almost normal.

Dr. POST inquired with regard to the frequency of gangrenous affections in connection with diabetes. He believed that there was some such connection.

Dr. FLINT recalled three cases of the kind, and Dr. PETERS referred to one.

Dr. DRAPER believed that the nervous theory of the disease was the one we must accept when we considered the experimental researches that had been made on the artificial production of diabetes in animals, and also when we considered the clinical history of the cases of diabetes that came under our observation. Not many cases, however, could be traced to a nervous shock as the beginning of the disease. After all, the liver appeared to be the organ which was the chief instrument in its production. His remarks were chiefly with regard to the relation of diabetes to another more common form of disease, called by Jones the sour disease, in contradistinction to the sweet disease. Dr. Draper believed that the great majority of cases of diabetes were associated with lithæmia; that there was an error in the digestion of nitrogenous foods as well as of the hydro-carbonaceous foods in diabetic subjects. In the grave form, in which dietetics did no good, he thought it might be shown that there was an hereditary history of gout, or it had been illustrated in the patient's own person. In these persons it was often found also that there was not only sugar in the urine, but urea and uric acid as well. This association he believed to be even more marked in the milder or intermittent forms. This relation between diabetes and gout was further shown by the fact that both classes of patients were benefited by the same dietetic restrictions. Nitrogenous diet was the diet upon which these patients thrived best, anomalous and paradoxical as it might seem to be. Both were also benefited by a visit to the alkaline springs. He believed that the chief benefit from medicinal treatment of diabetic subjects was to be derived from the alkalies. It was true the cases related by the author of the paper lent considerable support in favor of the opium treatment; but it must be remembered that in every case dietetic rules were also followed; and he was inclined to attribute the improvement of these patients to this element in the treatment. The advantages of the two—the medicinal and the dietetic treatment—could only be told when they had been tried separately. He had yet to see a mild form of the disease that would not yield to the dietetic treatment, the exclusion of the hydro-carbons from the food, especially if the alkaline method were also added to this.

Dr. SMITH, in closing the discussion, could not agree with Dr. Draper that diabetic patients were benefited by the same articles of food by which gouty patients were benefited. It was true except with regard to meat. Patients with diabetes took this well, while he believed such was not the case with patients of a gouty tendency. The remainder of his remarks are embodied in the abstract of his paper.

The Academy then adjourned.

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MEDICINE IN JAPAN.—According to a recent return, Japan possesses one hundred and fifty-nine hospitals, in which the patients are treated on principles recognized by Western nations. Vaccination is performed gratuitously and is compulsory. Moreover, a sort of medical act has been lately passed by which persons without certificates are prohibited from practising medicine or surgery.—*Lancet.*

## REVIEWS AND BOOK NOTICES.

EPILEPSY AND OTHER CHRONIC CONVULSIVE DISEASES. By W. R. GOWERS, M.D. London, J. & A. Churchill, 1882.

Dr. Gowers's various published lectures upon nervous diseases are so well and favorably known that the reading medical public at all times stands ready to graciously accept whatever is bestowed by him upon it. The present book is founded even to a greater extent than the previous ones upon personal experience, the author's position at the National Hospital for the paralyzed and epileptic having given him rare opportunities. In its three hundred pages the reader may find all that is known concerning the unconquerable disease it describes. In regard to the treatment of the affection there is nothing very novel, except it be in the value of borax. Led by the statements of Dr. Gowers, we have tried this salt in several cases, with absolute failure. Thus, in one instance of hystero-epilepsy, with fits of daily occurrence, borax given until it sickened the stomach had no effect upon the paroxysms, although when bromide was administered in very moderate doses the number of the paroxysms was reduced to one in two weeks.

The chapter on pathology seems to illustrate very well the little value of clinical reasoning, unsupported by experimental research, in explaining the nature of disease. The author is of the opinion that pathology and experiment fail to give us much light as to the seat and nature of the epileptic paroxysm, and attempts to settle the question by clinical studies. He comes to the conclusion that the discharge of nerve-force originates in the cortex, and says, "We have seen that, of all the fits which begin so deliberately as to allow the patients to be conscious of the onset, a special-sense warning is present in a fifth,—that is, the discharge, as far as we can ascertain, commences in a special-sense centre. But these centres are certainly situated within the hemispheres, above the pons, and far above the 'convulsive centre.' Hence the conclusion seems inevitable that the discharge in such cases commences in the hemispheres. It is equally clear that an attack which begins with an intellectual aura, an idea, cannot commence with a discharge in the medulla oblongata. Such an attack we can only conceive as commencing in the highest of all the cerebral centres, that which constitutes, to use the phrase made current by Spencer and Jackson, the anatomical substratum of intellectual processes." On the other hand, to our thinking, it is perfectly clear that a special-sense warning is not proof that the discharge commences in a special-sense centre in the cerebral cortex. We have certainly seen epilepsy with a marked special-sense warning produced by a glioma of an olfactory bulb; and the fact that in epileptic guinea-pigs, and sometimes in man, removal of an epileptiginous zone of the skin cures the epilepsy, seems a very strong indication that the discharge, at least in some cases of the disease, commences in the periphery. By reasoning, which we cannot for want of space here follow, Dr. Gowers shows very conclusively that the epileptic vaso-motor theories are of very doubtful value; and as his own explanations of the affection do not seem very much more conclusive, the sum of the whole matter is that at present we have not sufficient evidence to establish any theory of epilepsy, and that in this land of universal freedom each physician is at liberty to frame one for himself.

THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE EYE. By HENRY W. WILLIAMS, A.M., M.D., Professor of Ophthalmology in Harvard University; Ophthalmic Surgeon to the City Hospital, Boston; Ex-President of the American Ophthalmological Society; Vice-President of the International Ophthalmological Congress, London, 1872; Member of the Heidelberger Ophthalmologische Gesellschaft, etc. 8vo, pp. 464. Boston, Houghton, Mifflin & Co., 1881.

The profession has of late years been so liberally supplied with ophthalmological instruction for "students and general practitioners" that an addition to this class of literature can scarcely be said to meet a want long felt. Dr. Williams, however, has so long occupied a prominent position among American oculists that many who have been accustomed for years to associate his name with ophthalmic surgery will be glad to hear from him; and they will find his book one of the most readable of its kind. It is written in a scholarly style, and its descriptions of diseased conditions, prefaced by a brief account of the anatomy of each part, are unusually clear and satisfactory.

The author's acknowledged position and extensive experience entitle his opinions to respect; but it should be understood, more distinctly perhaps than the text always makes it, that some of these opinions, if not peculiar to him, are at least far from having the common consent of ophthalmic surgeons. Among them may be mentioned the statement that in phlyctenular conjunctivitis general treatment is not usually necessary, atropia is worse than useless, and the insufflation of calomel is a needless infliction of cruelty; the condemnation of Saemish's corneal incision in "creeping ulcer," the disuse of mercury in syphilitic iritis, and the rather promiscuous use of pilocarpin.

The plates, though not numerous, are unusually well executed, and the whole of the publisher's work is far above the average of American medical book-making.

G. C. H.

A PRACTICAL TREATISE ON HERNIA. By JOSEPH H. WARREN, M.D., etc. Second and Revised Edition. Fully Illustrated. Boston, James R. Osgood & Co. London, Sampson Low, Marston, Searle & Rivington, 1882. 8vo, pp. 428.

Upon careful examination of this book we find that of the four hundred and two pages of actual text contained in it, one hundred and fourteen are devoted to the subject of the "radical cure," and the greater part of these to urging the merits of the author's modification of Heaton's method of effecting that object. Heaton's idea, as set forth in a little work published several years since, was to inject a liquid, mainly composed of the fluid extract of white-oak bark, with some sulphate of morphia, into the hernial canal. Warren proposes to add to this some alcohol and ether, while his "very best formula" (*sic*) contains also some veratrum viride; and he has made some trifling changes in the instruments to be employed.

There is a great deal of "fine writing" in this book, and much learned quotation, obviously at second hand, since the authors cited do not always appear in the bibliography at the end of the volume; and the errors of style and typography are "too tedious to mention." We do not see exactly why a chapter on hydrocele and varicocele should have been introduced, nor why a list of "a few of the operators on hernia" should be given.

We would suggest that such expressions as "my distinguished friend Thomas Bryant, and my no less distinguished friend Mr. I. Wood," are in bad taste; nor is it usual to append to scientific works, except perhaps to school-books, commendatory letters and reviews in regard to them.

A "Practical Treatise on Hernia" would be a most valuable addition to surgical literature; but we cannot accord to the volume before us the right to bear such a title. P.

WEAK EYES IN THE PUBLIC SCHOOLS OF PHILADELPHIA: THE REPORT OF THE COMMITTEE ON EXAMINATION, ETC. By S. D. RISLEY, A.M., M.D. Pp. 37. Philadelphia, 1881.

We have received a copy of Dr. S. D. Risley's *brochure*, and, as the subject is a matter of so much public interest, we are glad of the opportunity again to call attention to it and to the abstract of the paper published in our issue of July 30, and also to the editorial notice in the succeeding issue.

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CONGRESSMAN SMITH has introduced a bill providing that the National Board of Health shall furnish vaccine virus free of charge. The object of the bill is to prevent a "corner" in vaccine virus.—*Chicago Medical Review.*

## GLEANINGS FROM EXCHANGES.

SPLENIC CIRCULATION.—Prof. C. S. Roy, of the Brown Institution, London, has come to the following conclusions concerning the circulation in the spleen, as the result of elaborate experiments with the instrument which he has invented for measuring minute changes in the bulk of internal organs:

"The circulation through the spleen differs from that of other organs in the important particular that the force which impels the blood through the organ is not that of the blood-pressure in the arteries. The splenic circulation is carried on chiefly, if not exclusively, by a rhythmic contraction of the muscles contained in the capsule and trabeculæ of the organ.

"This rhythmic contraction is exceedingly regular in so far as the rapidity of the rhythm is concerned, varying as it does in any given individual but very slightly even during an experiment lasting many hours and in which the condition of the animal has necessarily changed considerably. Roughly speaking, each contraction with the succeeding expansion lasts about one minute in the case of dogs and cats.

"As has also been pointed out, changes in the arterial blood-pressure have comparatively little influence on the volume of the spleen, from which it may be concluded that the passages by which the arterial blood enters the substance of the organ are relatively very narrow, and that the pressure of the blood contained in the pulp of the spleen is not so closely connected with that of the arterial blood-pressure as would be the case did the latter play a predominating part in carrying on the circulation through the organ.

"The rhythmic contraction and expansion of the spleen is different in nature from the rhythmic contraction and expansion which may be observed in various organs on the 'Traube-Hering' blood-pressure curves showing themselves. The spleen also takes part in the production of the 'Traube-Hering' curves of the blood-pressure, contracting with each rise and expanding with each fall of the arterial pressure, but these contractions are readily distinguishable from those which are proper to the spleen and which are independent of changes in the blood-pressure. Very frequently the combination of the 'Traube-Hering' contractions of the spleen and the 'specific splenic' contractions results in an 'interference' curve being described by the instrument which records graphically the changes in volume of the organ.

"Stimulation either of the central end of a cut sensory nerve or of the medulla oblongata causes a rapid contraction of the spleen. The paths by which such vaso-constrictor influences may travel from the cerebro-spinal centres are various. As has been shown, stimulation

of the peripheral ends of both splanchnics and of both vagi causes a rapid contraction of the spleen. After section of these four nerves (the vagi in the neck and the splanchnics at their point of passage through the diaphragm) stimulation of a sensory nerve still causes a contraction of the spleen, showing that vaso-constrictor influences may pass from the cerebro-spinal centres to the spleen by some other route or routes than by the nerves named. It is not my intention, however, to give a *résumé* of the contents of the foregoing pages, and I will only remark, in conclusion, that the fact that section of the principal nerves which convey vaso-motor influences from the cerebro-spinal centres to the spleen has so little effect on the rhythmic contractions and expansions of the organ, would seem to indicate that these latter are regulated and maintained by some mechanism contained in the spleen itself."

CASE OF ANEURISM OF THE ORBIT CURED BY LIGATION OF THE COMMON CAROTID.—Dr. J. R. Wolfe (*London Lancet*, December 3), in reporting a case of aneurism of the orbit caused by ligation of the common carotid, gives the number of cases recorded in seventy years at 106. According to Sattler's list, in 64 cases in which the common carotid was ligated, 23 were cured with good vision, 17 with loss of sight, 10 were failures, and 14 resulted in death. The large majority of idiopathic cases were females. The following are some of the details of Dr. Wolfe's case:

Mrs. M., æt. 22, received blow on left eye, February, 1881, when it became blue and the cheek swollen, but no pain. Three months later began to suffer pain, with severe knocking in the head. There was dilatation of the orbital tissues and slight protrusion of the eyeball. No pulsation, but slight bruit. Vision not affected, and only hyperæmia of the retina noticeable. October 11, after confinement, was seen again, when all tissues of the orbit were highly vascular. A tumor half the size of a walnut was seen near the inner canthus, soft, pulsating, and effaceable on pressure. When the finger was applied to the inner angle there was a distinct bruit, and the pulsation was visible at a distance. When the carotid artery of the same side was compressed, the bruit ceased and the tumor was partly effaced. The ophthalmoscope showed tortuosity and great dilatation of the veins, while the arteries were hardly visible. The disk was cloudy and its outline veiled. Vision had become impaired; there were a few ulcers on margin of cornea, and the pupil was sluggish. The patient was put under chloroform and the carotid tied in the neck with catgut ligature. The ligature was cut short, and wound dressed antiseptically. Pulsation in the orbit immediately ceased, the tumor was considerably diminished, and the eyeball retracted within the orbit to such an extent that motion in every direction was perfect. The tissues, ophthalmoscopic appearance, and vision gradually returned to the normal, and the patient was found on the fifteenth day after to have made a most satisfactory recovery.

CASE OF ECTROPION SUCCESSFULLY TREATED BY TRANSPLANTATION OF SKIN FROM THE ARM.—Dr. Tosswill reports (*British Medical Journal*) a case of ectropion resulting from a severe burn about the head and face a few years previous, which was successfully treated by transplantation of skin from the arm. Cicatricial tissue covered the whole left side of the face and forehead, and the outer two-thirds of the upper lid was much everted, even when the boy looked straight in front of him. The edge of the upper lid was dragged close to the margin of the brows, against which the lashes rested with their points directed upward; and when the boy attempted to close his eye or look downward, the eversion became still more marked. There was considerable keratitis with opacity present in the left eye, due in part to the eyeball remaining uncovered during sleep. The position of the lower lid was shown by a row of lashes, apparently growing from the cheek, an inch or so below the eyeball, and the mucous membrane was to a considerable extent replaced by what could not be distinguished from ordinary skin. The lower lip was also everted, and the region of the right eye was similarly affected, but to a less degree than the left. Chloroform was administered, and the remains of the upper and lower lids were dissected out until their ciliary margins could be brought into apposition, when they were united with two or three silk sutures. Flaps were next dissected from the right arm and forearm and placed in position upon the raw surfaces over the upper and lower lids, where they were retained by silk sutures. Eleven days after the operation the stitches which united the lids were removed, and on the following day their united edges were separated by means of a bistoury. Four months after the operation no ectropion is manifest in the upper lid, and but very little in the lower. The eyeball is covered during sleep, and the cornea presents nearly a normal appearance.

IMPROVED METHOD OF TREATING CARBUNCLE.—Dr. Charles Taylor calls attention, in the *Australasian Medical Gazette*, to the use of injections of strong carbolic acid into the substance of the carbuncle, as a very efficient means of causing it either to "abort" or run a much shorter course than usual. He has employed this method with success in a number of cases where carbuncle occurred in persons "enjoying good bodily health." An ordinary hypodermic syringe is used, and five or six drops of pure fluid carbolic acid injected. Linseed-meal poultices, fomentations, and constitutional remedies, such as the in-

dividual case may suggest, are also resorted to. There is little or no pain manifested on the part of the patient, and the acid seems to be retained where most needed, in the substance of the tumor, by coagulating the albumen in the surrounding tissues, and thus preventing absorption into the system. Dr. Taylor's method, as he himself states, is by no means original, but is a modification of two other methods, that of Dr. Eader, who introduced threads saturated with a solution of carbolic acid in glycerin, and that of an American practitioner, whose name he fails to mention, who injected half a drachm instead of five or six drops of the pure acid.

THIRTY-TWO CONSECUTIVE OVARIOTOMIES IN ONE YEAR.—Dr. John Homans reports (*Boston Med. and Surg. Jour.*, January 26) thirty-two completed, and three attempted, ovariotomies performed by himself during the last year, and from which but three died, one suffering from acute mania. An analysis of the report shows that the age of his patients ranged from 14 to 73, the average being 40. The length of the incision varied from three to eight inches. There were adhesions in eleven cases, two of which died. The pedicle was tied, and burnt off with Paquelin's thermo-electric cautery. The tumors removed weighed from two and a half to ninety pounds, the latter, however, including the ascites also present. The average weight, excluding this case, was seventeen and a half pounds. In four cases dermoid cysts were removed, and in three both ovaries. The bladder was wounded in one case without any ill effects resulting. The temperature is only given in one case, that of a patient æt. 73, where there were adhesions, and in which 99.4° F. was the highest recorded.

## MISCELLANY.

SIR ERASMUS WILSON has given fifty thousand dollars to the University of Aberdeen as a foundation for a professorship of pathology; and Mr. Enoch Pratt has given Baltimore a million of dollars to support a free library.

FREE TRADE IN MEDICINE.—In order to show that we are not alone in our opinion of the editorial "Free Trade in Medicine," in the first issue of the *Medical News*, we clip the following sentences from the *Chicago Medical Review:*

. . . "If so, there is nothing further to do except to congratulate the *News* on its idea of medical literature, and on the fact that its position in advocacy of free trade is supported by the worst and most disreputable members of the eclectic medical press. . . . The *News* has, like many a politician, cloaked or attempted to cloak evils by appealing to the star-spangled banner. It endorses the old flag and unlimited graduation of medical students. . . . That Americans have done so much under such disadvantages shows what they might do were science properly protected by law. America, at a time when there was less free trade in medicine, produced giants in science, like Benjamin Rush,—not to speak of others,—who is still quoted with approval in Europe on almost every one of the medical sciences from clinical medicine to psychiatry. The free trade advocated by the *News* seems identical in results with that practised by Buchanan,—a supply of diplomas to meet the demand. In view of this state of things, the declaration that 'in its management the *News* will always be conducted for the advancement of the interests of the whole profession, and it shall be absolutely uninfluenced by any personal, school, or local interest; modelled on the highest type of weekly medical journalism, its scope shall be cosmopolitan and its character national,' can be only regarded as metaphorical, unless by 'the interest of the profession' the *News* means the interest of certain low-grade medical schools."

## OFFICIAL LIST

*OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U.S. ARMY FROM FEBRUARY 5 TO FEBRUARY 18, 1882.*

CAMPBELL, JOHN, LIEUTENANT-COLONEL AND SURGEON, MEDICAL DIRECTOR DEPARTMENT OF THE SOUTH.—Granted leave of absence for fifteen days from 13th instant. S. O. 17, Department of the South, February 11, 1882.

WOODHULL, A. A., MAJOR AND SURGEON.—The leave of absence granted him in S. O. 227, A. G. O., 1881, is extended one month and ten days. S. O. 27, A. G. O., February 3, 1882.

GARDNER, WM. H., CAPTAIN AND ASSISTANT-SURGEON.—Assigned to duty as post-surgeon at Fort Concho, Texas. S. O. 13, Department of Texas, February 6, 1882.

TREMAINE, W. S., CAPTAIN AND ASSISTANT-SURGEON, who reported at these headquarters January 9, 1882, per Paragraph 12, S. O., c. s., A. G. O., will await further orders in New York City from date of his so reporting. S. O. 20, Department of the East, February 7, 1882.

BARTHOLF, JOHN H., CAPTAIN AND ASSISTANT-SURGEON, FORT LAPWAI, IDAHO.—Granted leave of absence for fifteen days. S. O. 12, Department of the Columbia, January 25, 1882.

MAUS, L. M., CAPTAIN AND ASSISTANT-SURGEON.—The leave of absence granted him in S. O. 222, A. G. O., October 1, 1881, extended one month. S. O. 36, A. G. O., February 14, 1882.

COMEGYS, E. T., CAPTAIN AND ASSISTANT-SURGEON.—To be relieved from temporary duty at Columbus Barracks, Ohio, on receipt of order, and to report in person to Commanding General, Department of the Missouri, for assignment to duty. S. O. 32, A. G. O., February 9, 1882.

WOOD, M. W., CAPTAIN AND ASSISTANT-SURGEON.—The seven days' leave granted him on 4th instant by Post-Commander, Fort Brady, Mich., is extended twenty-three days. S. O. 19, Department of the East, February 6, 1882.

BANISTER, JOHN M., FIRST-LIEUTENANT AND ASSISTANT-SURGEON, FORT RENO, IND. TY.—The leave of absence granted him in Paragraph 1, S. O. 18, Department of the Missouri, January 24, 1882, is extended one month. S. O. 16, Military Division of the Missouri, February 15, 1882.